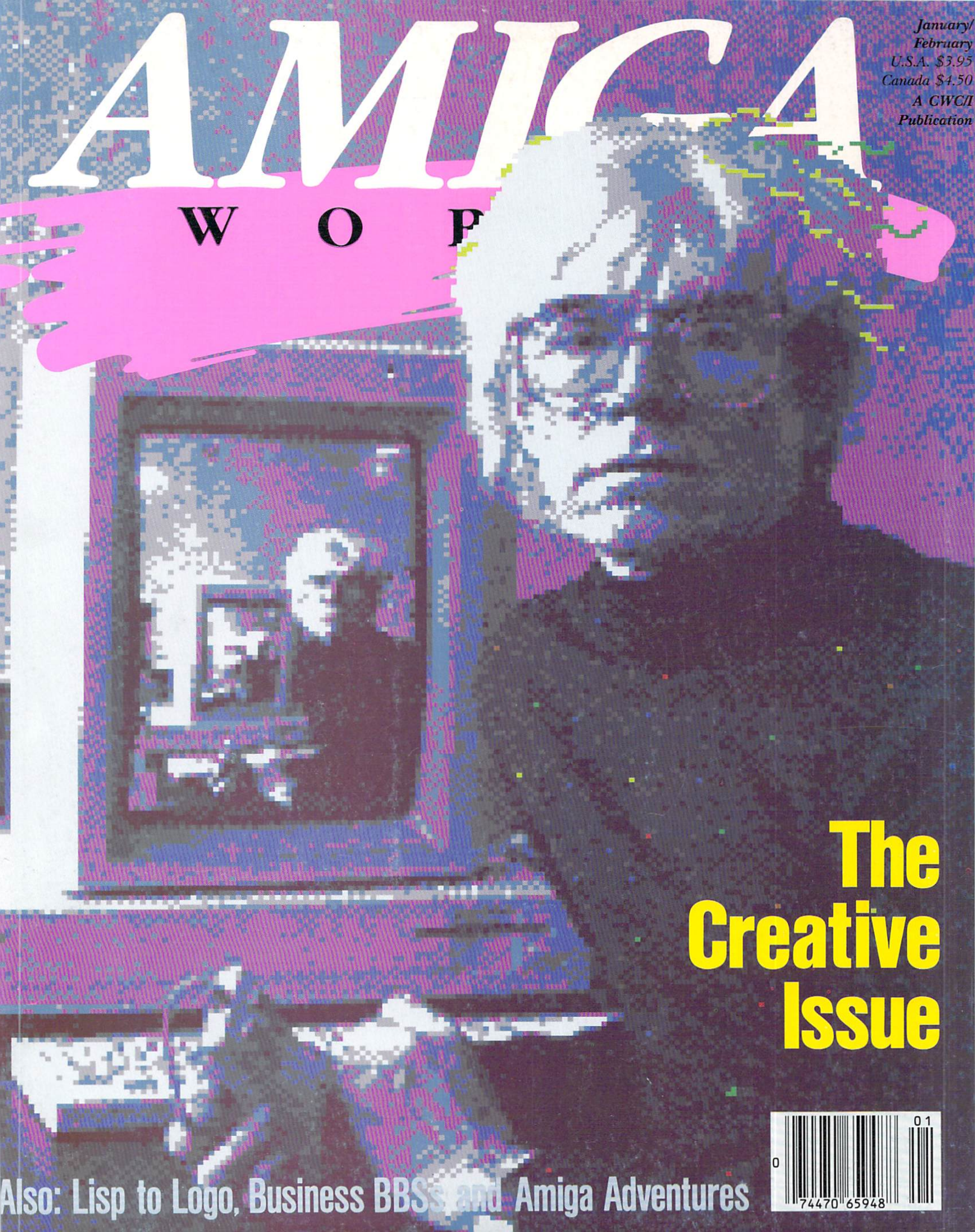

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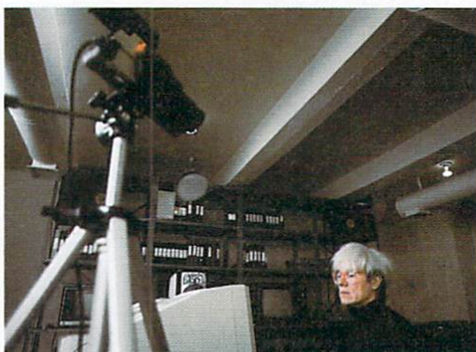
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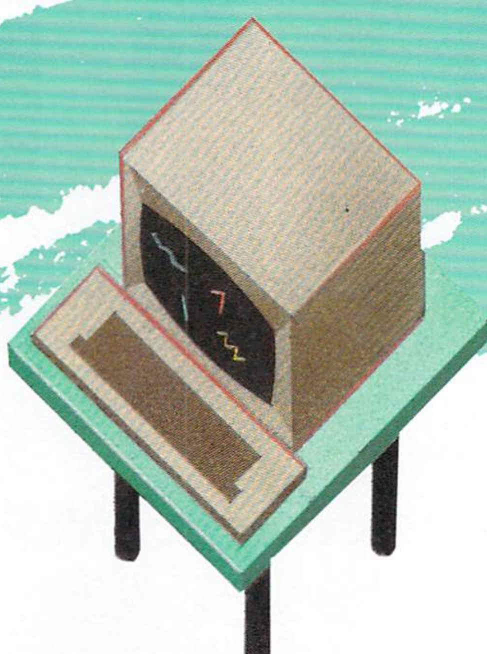
By Abigail Reifsnyder

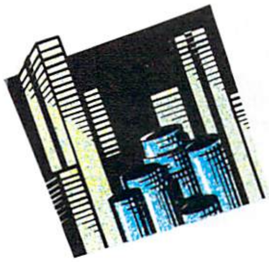
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Andy Warhol

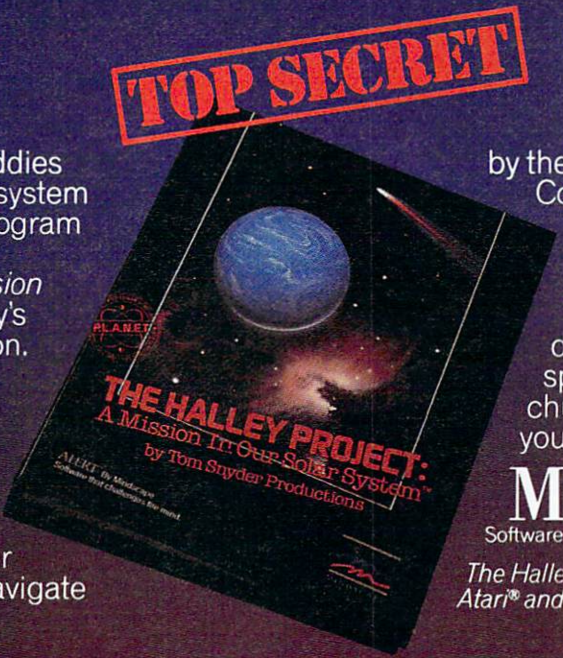
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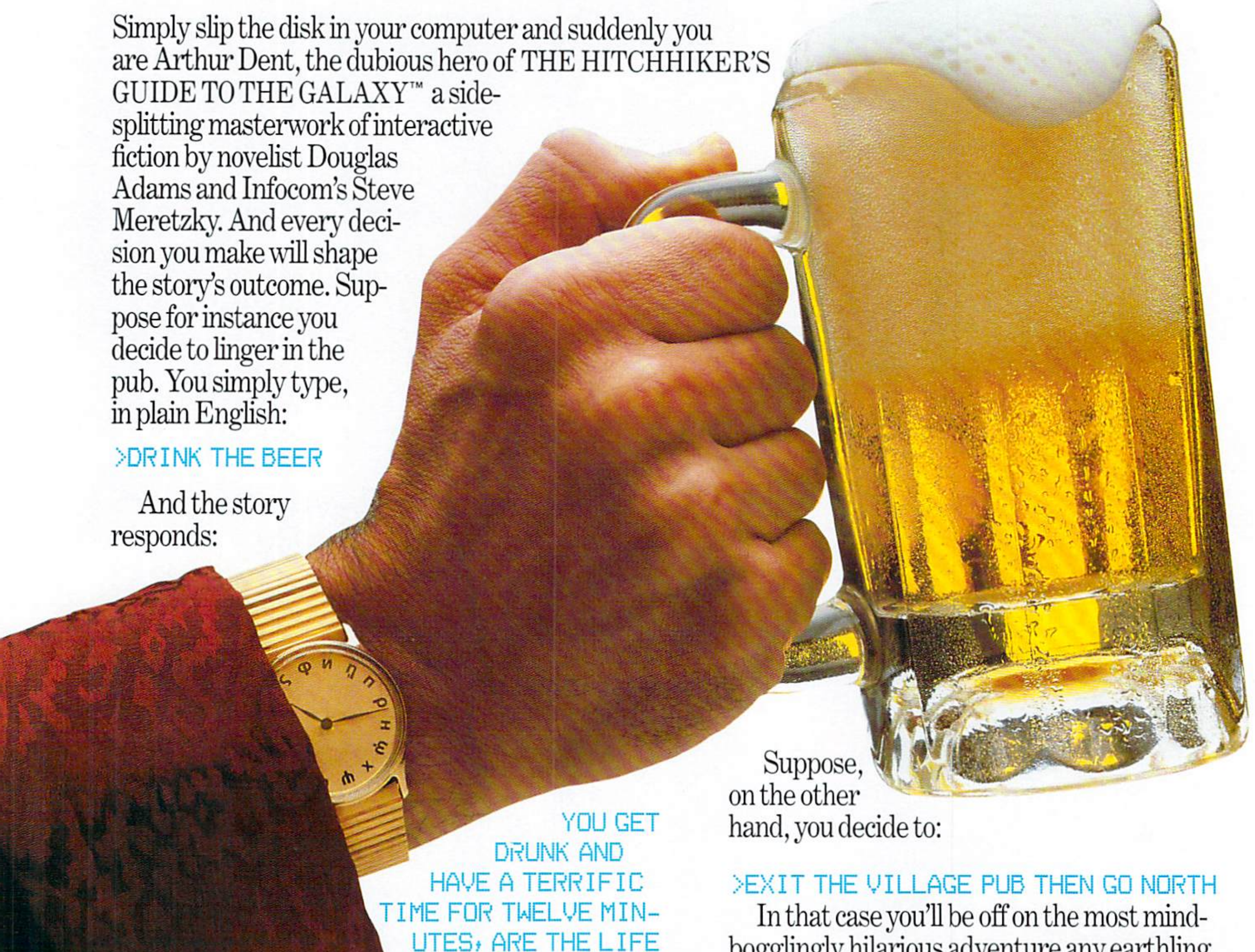
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>DRINK THE BEER

And the story responds:

YOU GET DRUNK AND HAVE A TERRIFIC TIME FOR TWELVE MINUTES, ARE THE LIFE AND SOUL OF THE PUB, TELL SOME REALLY TERRIFIC STORIES, MAKE EVERYONE LAUGH A LOT, AND THEY ALL CLAP YOU ON THE BACK AND TELL YOU WHAT A GREAT CHAP YOU ARE AND THEN THE EARTH GETS UNEXPECTEDLY DEMOLISHED. YOU WAKE UP WITH A HANGOVER THAT LASTS FOR ALL ETERNITY. YOU HAVE DIED.

Suppose, on the other hand, you decide to:

>EXIT THE VILLAGE PUB THEN GO NORTH

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The Hitchhiker's Guide to the Galaxy comes complete with Peril Sensitive Sunglasses, a Microscopic Space Fleet, a DON'T PANIC Button, a package of Multipurpose Fluff and orders for the destruction of your home and planet.

You communicate – and the story responds – in full sentences. Which means that at every turn, you have literally thousands of alternatives. So if you decide it might be wise, for instance, to wrap a towel around your head, you just say so:



>WRAP THE TOWEL AROUND MY HEAD

And the story responds:

THE RAVENOUS BUGBLATTER BEAST OF TRAAL IS COMPLETELY BEWILDERED. IT IS SO DIM IT THINKS IF YOU CAN'T SEE IT, IT CAN'T SEE YOU.

But be careful about what you say. Or one moment you might be strapped down, forced to endure a reading of the third worst poetry in the galaxy; the next you could be hurtling through space with Marvin the Paranoid Android aboard a stolen spaceship.

And simply staying alive from one zany situation to the next will require every proton of puzzle solving prowess your mere mortal mind can muster. Even simple tasks can put you at wit's end:

>OPEN THE DOOR

And the story responds:

THE DOOR EXPLAINS, IN A HAUGHTY TONE, THAT THE ROOM IS OCCUPIED BY A SUPER-INTELLIGENT ROBOT AND THAT LESSER BEINGS (BY WHICH IT MEANS YOU) ARE NOT TO BE ADMITTED. "SHOW ME SOME TINY EXAMPLE OF YOUR INTELLIGENCE," IT SAYS, "AND MAYBE, JUST MAYBE I MIGHT RECONSIDER."



Other interactive science fiction stories from Infocom include PLANETFALL,™ in which you're stranded on a mysterious deserted world. STARCROSS,™ a puzzling challenge issued eons ago and light-years away. SUSPENDED,™ the race to stabilize an entire planet's life support systems. And A MIND FOREVER VOYAGING,™ a radically new work of serious science fiction in which you explore the future of mankind.

But don't panic. You'll be accompanied every light-year of the way by your trusty Hitchhiker's Guide, which you can always depend on for up-to-the-nanosecond information. Well, almost always:

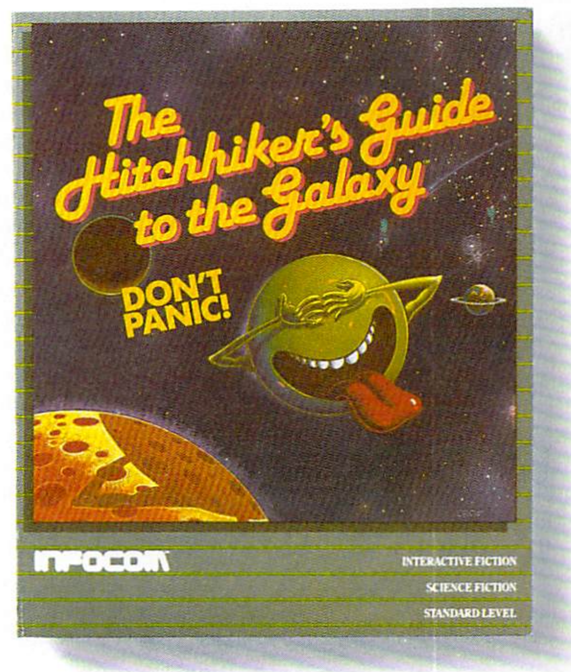
>CONSULT THE HITCHHIKER'S GUIDE ABOUT THE MOLECULAR HYPERWAVE PINCER

And the story responds:

SORRY, THAT PORTION OF OUR SUB-ETHA DATABASE WAS ACCIDENTALLY DELETED LAST NIGHT DURING A WILD OFFICE PARTY.

So put down that beer, take that towel off your head, open the door, hitchhike down to your local software store today and pick up THE HITCHHIKER'S GUIDE TO THE GALAXY. Before they put that bypass in.

Still not convinced? Try our Sampler Disk which includes portions of four different types of stories for a paltry $7.95. If it doesn't get you hooked on the addictive pleasures of Infocom, return it for a full refund. If it does, you can apply the price toward any Infocom story. You can't lose!



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Avision

By Steve Twombly

Excitement

At the time of this writing, Amiga computers are shipping to dealers throughout the country and being purchased by inspired computerists, both novices and advanced users. Many of the products that you will soon be able to purchase are in the development stages at this time, all in varying degrees of readiness. The introduction of the Amiga has initiated a flurry of excitement and activity among hardware and software developers.

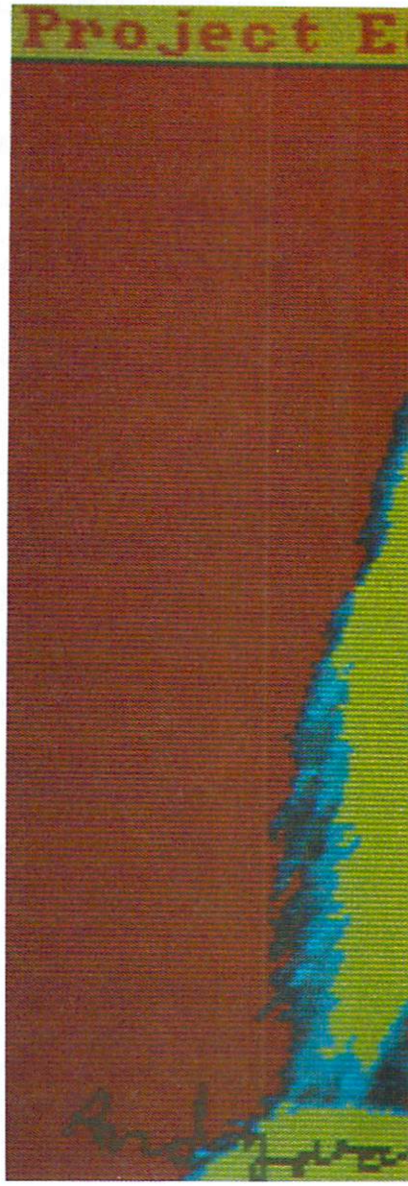
The first Amiga development systems arrived with the most complete set of software development tools of any new microcomputer to come to market. Several programming languages and utilities were made available early on to a wide range of enthused companies with new ideas about software applications and microcomputer usage. These companies range from small to large, from undiscovered to well-established. Many of these developers will sell their products to larger firms for marketing and distribution, and many will start their own new companies to produce and market their products.

One primary source of energy is motivating these enthusiastic new visionaries. That energy is excitement! Excitement is a strong motivating force that can propel its possessor to accomplish a great deal very quickly. It can be responsible for the actualization of ideas that, in the conceptual stages, appear almost impossible. When one is truly excited about an idea, everything else (including sleeping and eating) takes a back seat; anyone involved in computer programming knows what I mean. Many of the products either now completed or in the development stages have been labored over round-the-clock for months.

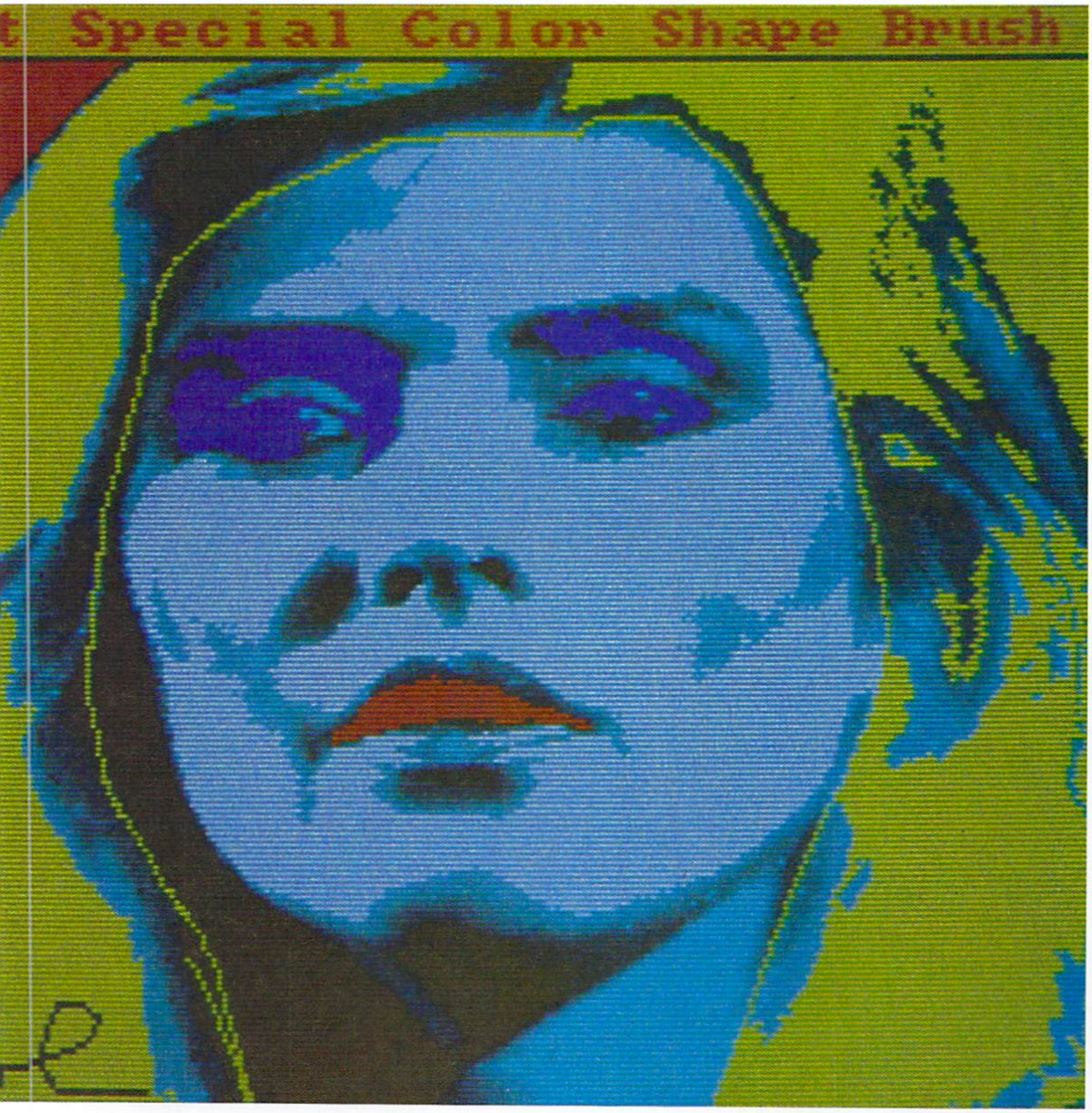
Some companies see in the Amiga a very strong mainstream computer with the potential to run high-powered business applications very quickly, process large volumes of data and carry on a variety of critical tasks simultaneously. These developers will advance the quality and performance of business software in such traditional disciplines as word processing, spreadsheets, database management, presentation graphics and telecommunications. Some companies are at work developing educational software, recognizing the opportunity to enhance the learning process and pioneer new teaching techniques through interactive video, artificial intelligence and audio/visual juxtapositions.

Some companies I've talked to are interested in the digitizing capabilities of the Amiga. Their vision encompasses a wide variety of fields, from industry and the military to video and art. I am aware of several projects in the works using the concept of artificial intelligence on the Amiga to drive expert systems dedicated to very specific tasks, using the Amiga as either a single workstation or as part of a large network. Unique forms of entertainment software are being developed for you and your Amiga, incorporating sophisticated sound and animation, unbelievably realistic simulations and adventures and intriguing interactive fiction, just to name a few.

Since we at *AmigaWorld* are able to contact and work with these developers early, in some cases during the conceptual stages of their ideas, we are able to foresee what is in store for you as these ideas are developed and brought to the marketplace as products. The world of Amiga at this point in time is infused with a flurry of activity, where ideas are hatched and exchanged, scrapped and reborn, finally shaped and then painstakingly refined into finished products. Many of these ideas are now ready for you to share



and put to use on your Amiga, but many more are yet to come. *AmigaWorld* will be bringing you up to date on these new products and developments throughout each issue, sometimes bringing you right into the development process as well. When we think it's important, we'll give you an opportunity to



meet the developers and share in their excitement and motivation.

Excitement and enthusiasm are contagious among those who are working with the Amiga. I have read the charters of many new Amiga users groups that have been forming across the country. We have received telephone calls and letters from many enthusiastic groups in North America and in Europe as well. Several online services have already introduced Amiga special interest groups. College professors are recommending Amigas to their students, and many people who have never owned or used a computer before are planning to make the commitment and purchase an Amiga. One young musician wrote to us of his plans to computerize his local recording studio with the Amiga. He has convinced the studio's owner to invest in Amigas, and both individuals are excited about the new and advanced recording environment they're creating. We all know that the Amiga is a very strong persuader.

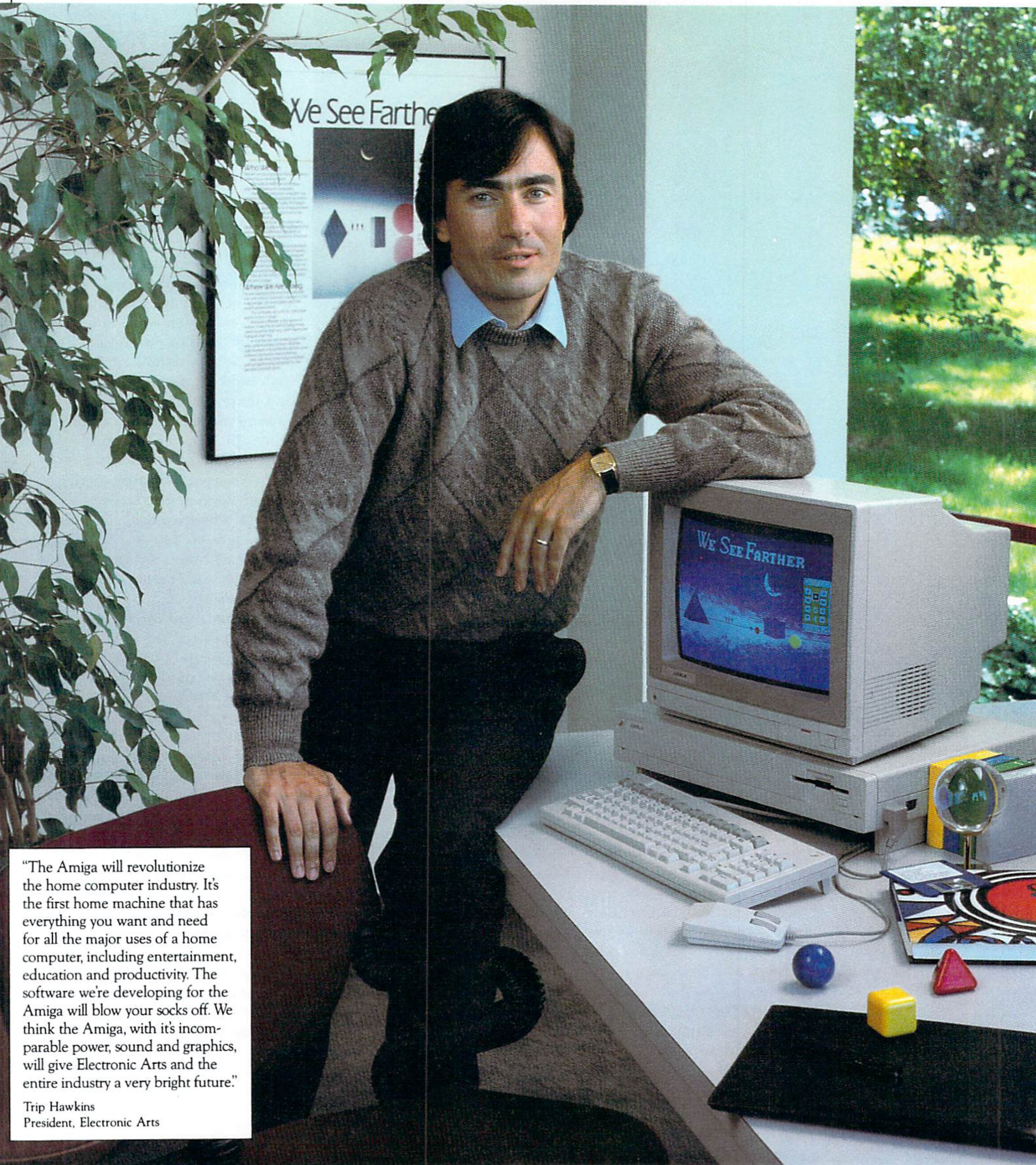
AmigaWorld will serve as a focal point for this enthusiasm and creative energy, channeling the many diverse streams into a central forum and serving as a source of valuable information to you. No matter what your interest, if it has to do with the Amiga, we are interested. We're interested in your excitement and sense of discovery as you explore the features and capabilities of your new Amiga. We'll bring you stories about unique uses of the Amiga and let you share in the discoveries of those who have brought new meaning to the practice of computing by using their Amigas creatively, and in many cases, competitively.

AmigaWorld will continually strive to provide you with more information and ideas relevant to your new computer. We'll bring you articles that will help you use your Amiga and get more performance out of it than any manual or documentation can provide. *AmigaWorld* will be as exciting as the market that it covers, and if you keep the feedback coming our way, we'll be able to respond better to your needs. So, enjoy this issue on Amiga creativity and share the excitement of *AmigaWorld*. ■

Image of Deborah Harry digitized with A-Squared's Amiga-Live!, colored by Andy Warhol.

A message from a leading software publisher.

WHY ELECTRONIC ARTS



"The Amiga will revolutionize the home computer industry. It's the first home machine that has everything you want and need for all the major uses of a home computer, including entertainment, education and productivity. The software we're developing for the Amiga will blow your socks off. We think the Amiga, with it's incomparable power, sound and graphics, will give Electronic Arts and the entire industry a very bright future."

Trip Hawkins
President, Electronic Arts

S COMMITTED TO THE AMIGA.

In our first two years, Electronic Arts has emerged as a leader of the home software business. We have won the most product quality awards—over 60. We have placed the most *Billboard* Top 20 titles—12. We have also been consistently profitable in an industry beset by losses and disappointments.

Why, then, is Electronic Arts banking its hard won gains on an unproven new computer like the Amiga?

The Vision of Electronic Arts.

We believe that one day soon the home computer will be as important as radio, stereo and television are today.

These electronic marvels are significant because they bring faraway places and experiences right into your home. Today, from your living room you can watch a championship basketball game, see Christopher Columbus sail to the New World, or watch a futuristic spaceship battle.

The computer promises to let you do much more. Because it is interactive you get to participate. For example, you can play in that basketball game instead of just watching. You can actually be Christopher Columbus and feel firsthand what he felt when he sighted the New World. And you can step inside the cockpit of your own spaceship.

But so far, the computer's promise has been hard to see. Software has been severely limited by the abstract, blocky shapes and rinky-dink sound reproduction of most home computers. Only a handful of pioneers have been able to appreciate the possibilities. But then, popular opinion once held that television was only useful for civil defense communications.

A Promise of Artistry.

The Amiga is advancing our medium on all fronts. For the first time, a personal computer is providing the visual and aural quality our sophisticated eyes and ears demand. Compared to the Amiga, using some other home computers is like watching black and white television with the sound turned off.

The first Amiga software products from Electronic Arts are near completion. We suspect you'll be hearing a lot about them. Some of them are games like you've never seen before, that get more out of a computer than other games ever have. Others are harder to categorize, and we like that.

For the first time, software developers have the tools they need to fulfill the promise of home computing.

Two years ago, we said, "We See Farther." Now Farther is here.

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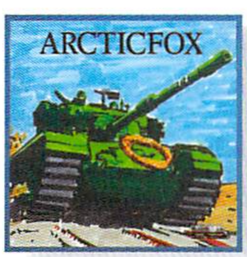
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A new kind of computerized board game, like chess with wizards and dragons for pieces. But when one lands on another, they have to fight a white-knuckled action battle.



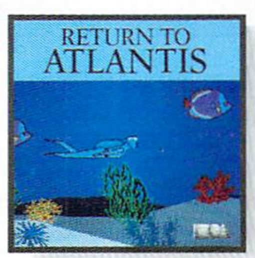
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For details about availability, see your Amiga software dealer or call us at (415) 572-ARTS. For a product catalog send $.50 and a stamped, self-addressed envelope to: Electronic Arts, Amiga Catalog Offer, 2755 Campus Drive, San Mateo, CA 94403. Amiga is a trademark of Commodore Business Machines. Skyfox, Seven Cities of Gold, Deluxe Video Construction Set, Arcticfox, Return to Atlantis and Electronic Arts are trademarks of Electronic Arts. Marble Madness is a trademark of Atari Games, Inc.

Zeitgeist

By Guy Wright



So what is the spirit of the times, this time? Creativity, art, design, personal art, professional art, business telecommunications, interactive fiction and a screen or two of video.

If *AmigaWorld* were just another computer magazine and the Amiga were just another computer, then we would call this, our third issue, a graphics issue. There would be articles on screen dumps and algorithms for drawing shapes. Perhaps a short program that displays a Christmas tree while playing Silent Night. Graphics issues are popular in the computer magazine field. But *AmigaWorld* is, as you have already guessed, not your standard computer magazine. That is why, if we had to put a name on it, we would call this an art or creativity issue.

As the software is developed, we will follow it, doing reviews, offering suggestions, evaluating products, even publishing tips and techniques for getting the kinds of graphics results you

need out of the Amiga. In this issue, however, we have tried to address larger questions like, what is art? What are the professionals, like Andy Warhol, doing with the Amiga? What will the people who own the Amiga be doing with the graphics? How do "traditional" artists feel about computer art?

Is *AmigaWorld* trying to be an art magazine? In this issue we are. We had artists and illustrators working with the Amiga and writing about it. We interviewed designers, printmakers, papermakers, painters, professors, video engineers and others. Some of them were enthusiastic about the Amiga. Some were lukewarm. Some didn't like the computer at all. In some cases, we asked more questions than we answered, and perhaps we bit off more than we could chew. Who in their right mind would try to define art in the first place? Is it a reflection? A hobby? An amorphous manifestation of the times? A journeyman's skill that can be learned by almost anyone with desire and a steady hand? A window on the soul?

And then there are the people, the artists. Inspired by the possibilities or threatened by the technology. A careful read will show a number of portraits. World-famous Warhol using the Amiga for (is it even proper to give a name to a kind of art? Pop art? Computer art? Personal art? Professional art for hire?) Dolly Parton portraits and MTV videos, illustrators who sell commissioned drawings for $175 a shot, and children adding more love to birthday cards.

The reason that we took such a long step in this direction was that the Amiga is advanced enough to warrant a serious look into the nature of creativity. Before the Amiga, the only computer-generated art was either done on very, very expensive equipment (more expensive than your average "starving artist" could ever hope to afford) or of a quality that could be reproduced with a sheet of graph paper and four different colored magic markers—etch-a-sketch art. When computer music came along, it was used as a gimmick, a strange noice glued onto the side of a song. Only recently have musicians begun to integrate computer music into their works. The same will be true of the Amiga in visual art. It will, at first, be used as a gimmick and later as an integral part of the artist's work, another type of brush, another color on the palette.

So, where is the bottom line? How is this issue of *AmigaWorld* going to improve profits in your business? We have a few things here and there that might be worth your while. Some on-line business services are explored, which might just influence your telecommunications decisions. Some hard-core hardware from Tecmar is discussed. The Software Group, developers of the Enable integrated package, talk about their product line.

We also venture into the fantasy worlds of interactive fiction. And the video-interfacing wizards at A-Squared cast a few digitizing spells. We talked to the people at Mindscape, producers of the Amiga Tutor program, about creativity in software design. There are articles about Lisp and Logo, from turtles to artificial intelligence. Sign on QuantumLink, a new Commodore network. Confessions of a Mac user, letters from readers and Digital Canvas.

If you are looking for the Wall Street outlook or how to design your own analog-to-digital converter circuits, then you will have to stretch your imagination quite a bit (perhaps all the way to schizophrenia), because we just didn't cover those topics. And if you think that art isn't a business, just like widget manufacturing and networking, then perhaps your imagination could stand a little stretching, because Dolly Parton, MTV, Andy Warhol, video digitizing and illustration may not be traditional 9-to-5 business, but they certainly put food on someone's table.

If this issue doesn't help you design a more efficient spreadsheet, at least it will make you think about the Amiga as another kind of productivity tool for those people whose business is creativity.■

Repartee

I just bought a copy of Amiga-World. *It's incredible to me that people could put out a premiere issue about this computer and not even give a hint of its price range. Does it cost about a hundred dollars? A thousand? Ten thousand? Nor is there a hint of where it can be bought.*

Bernard Bush
Mansfield, MO

At the time we put together the premiere issue, prices had not been set, nor had dealers been signed up. By now you probably know the answers to your questions, but in case you haven't heard, the price for the basic Amiga with mouse, built in 3.5″ disk drive, keyboard and 256K computer (without monitor) is $1,295. The Amiga monitor is $495, the external 3.5″ drive is $295, the external 5 ¼″ drive is $395 and the 256K expansion cartridge is $195. As to where you can buy an Amiga, you will find a list of factory dealer representatives in this issue who you can call to find a retail outlet in your area, or you can try the main Commodore number—215-431-9100—**Editors**

Everytime a new computer magazine comes out, EVERYBODY (especially advertisers) rush letters to the editor to congratulate them on having been able to get that first copy to the printers.

I thought it might be somewhat refreshing to dispense with the congratulations. I bought the magazine on the newsstand and shortly thereafter mailed a card to enter my subscription. That is about the best I can offer you.

Now, get to work!

Dean Cavett
Hamilton, OH

If you didn't write the letters congratulating us, then we would just have to write them ourselves.—**Editors**

Congratulations on making Big Blue blush! P.S.: Peterborough is a beautiful little town.

Dan Nelson
Lakewood, CO

That's why we're here.
—**Editors**

First, let me tell you that AmigaWorld's premiere issue was excellent. Truly, AmigaWorld is a first class act. As I read about the programs coming, I got excited. Then... Wowzah! The graphics!... I realized I had to get this phenomenal computer.

A few suggestions so your magazine will be perfect when I finally get my Amiga.

First—this is dumb, because it will probably be solved by next issue—a letters page! Ahh, forget it! By the time this gets to you, you'll have tons of mail coming in.

Second, why not set up an Amiga bulletin board system (maybe free to subscribers)?

Third, how about some programs that we can type in and monthly disks with the programs on them?

Christopher Shieh
Houston, TX

Thirdly, we just might do that. Secondly, we are working on some BBS ideas and will keep you informed. Firstly, as to a letters page in the magazine, we have no plans to put a letters section in *AmigaWorld*, now or ever. What a dumb notion!—**Editors**

Wow! I was hoping that AmigaWorld *would be similar to* MacWorld. *It is. But it's even better.*

So far I've purchased five copies of the Premiere issue of AmigaWorld to share with friends, and to send to software developers who I am trying to encourage to move their software over to the Amiga.

When trying to get someone to share my enthusiasm for the Amiga, I merely have to put a copy of AmigaWorld *in front of them. That's all it takes.*

People who have seen the Amiga perform and then express doubt about it's success in the marketplace are unbelievable. The Amiga is the present and the future of computing.

Yes, I will buy an Amiga. Life is worth living. Fun has arrived on the computing scene!

Rich Kevin O'Brien
Renton, WA

Don't be so reserved, Rich. Try to show a little enthusiasm. It isn't good to hide your feelings. Mac who?—**Editors**

Down here in Texas, pardner, we aims to call it Amig-o-World. None of that there feminist stuff for us cowpokes. Now, for the bad news, I read my first copy of AmigaWorld *and also had to go out and buy my first pair of glasses. For gosh sakes, don't you have a little bigger print?*

Now for the good news. I can't wait to get my first glimpse of the Amiga. We are rooting for Commodore to have as much success with the Amiga as the 64.

We are all waiting anxiously to get our hands on your new brain child, and I have the seven million pesos in a sack ready to go. So lots of luck to AmigaWorld *and Commodore.*

Larry T. Killen
San Angelo, TX

LARGER PRINT = FEWER WORDS—**Editors**

Congratulations on your new magazine. My subscription is in the mail. Amiga promises to be an ideal "studio" computer as well as an office/home computer.

If you could just say "studio" once in a while, it [Amiga] would appeal to architects, designers, artists, media persons, would-be artists, etc.... With all the 68000 motherboards being put out, it [Amiga] must be portrayed differently. If commercial, semi-commercial video and audio interface hardware and software is not forthcoming, I will just stick to my Apple.

Conclusion: The high-powered studio features enhance the use of the Amiga for business and home. How is that for PR? You want business and education to identify with the information power of the media, even if it is strictly Symphony or Jazz or whatever.... I threw these in to make a point. The ads and pictures [in AmigaWorld*] portray "studio," but you use the words office/home or business/education. The vendors and photographs say one thing, but the articles themselves are oriented to a pre-Amiga computer environment.*

Gene L. Porter
Multi-media Specialist
San Francisco, CA

Studio, studio, studio.
—**Editors**

The Amiga is the computer for right-thinking people. It will never let you down (notice the cursor keys illustrated on page 23 of Amiga-World's *premiere issue).*

Once upon a time I sold my PC to buy a Macintosh. I may switch again if the Amiga takes off, but I'm not convinced yet.

John J. Seal
Franklin, IN

Picky, picky, picky. Your guess is as good as ours. Didn't you look at the cover?—**Editors**

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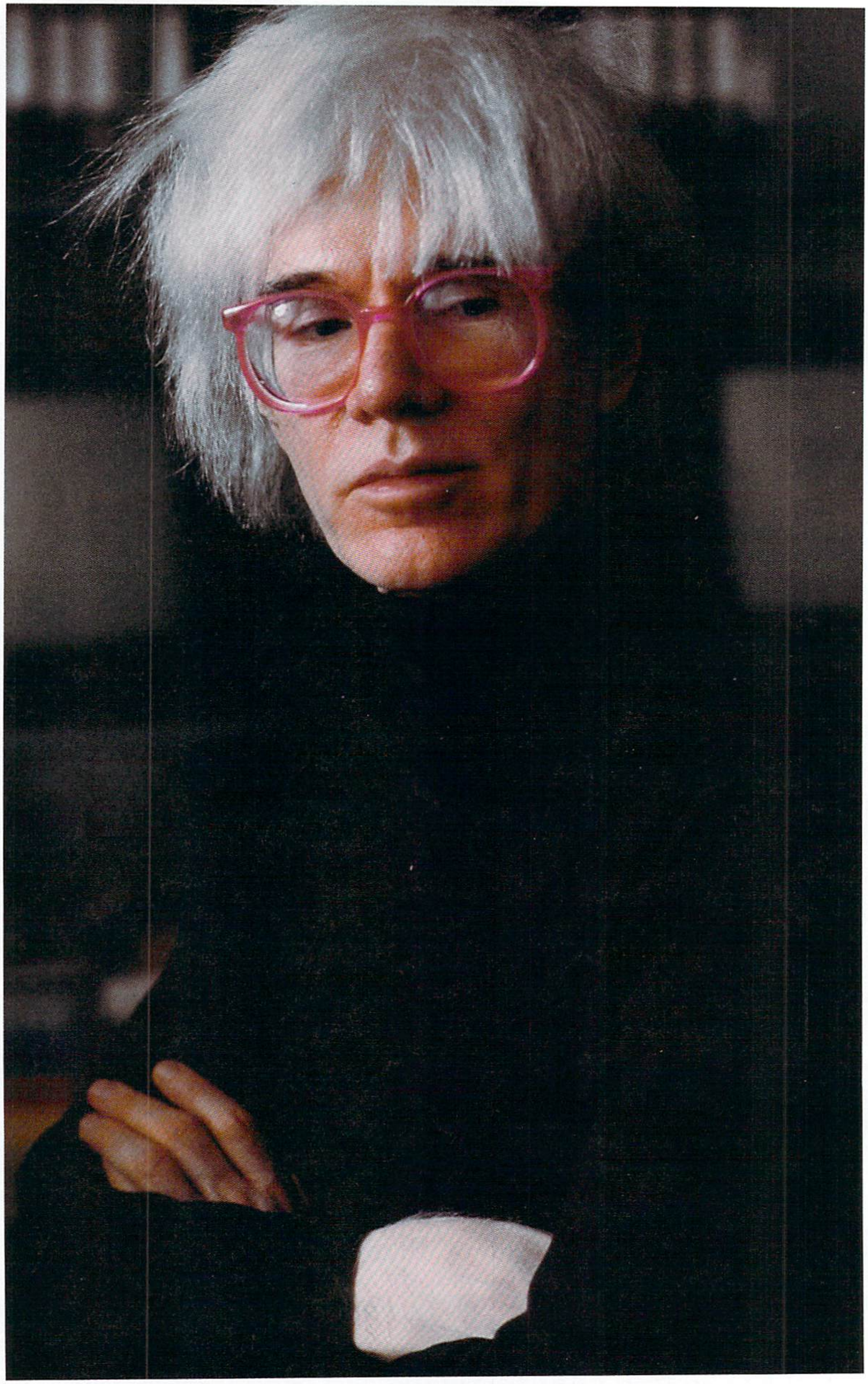


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"The thing that I like most about doing this kind of art on the Amiga is that it looks like my work."



Photography by Edward Judice

Andy Warhol: An Artist and His Amiga

A conversation about art and the Amiga with artist Andy Warhol

By Guy Wright and Glenn Suokko

Warhol Studios. New York City. Into the front to shake hands all around. Managers, producers, art dealers, and, in the back of the crowd, Andy Warhol. Small, black jeans, sneakers, bright pink glasses, white hair. He shakes hands with a quiet "Hi," then disappears somewhere into the large building while the rest of us are taken up, two at a time, in a very small Otis elevator to a second or third floor dining room for lunch.

The cozy affair is filled with editors from Interview *magazine, art critics, friends, managers, us (Glenn Suokko,* AmigaWorld's *Art Director, and myself), and others all talking, drinking wine, sitting at some unheard command and eating. Andy drifts in quietly, sits and eats at the far end of the table. Monosyllabic answers to questions asked by others at the table.*

I ask an editor of Interview *what questions I should ask Andy. "Is there anything he likes to talk about?"*

"That's a hard one," he says. "Andy doesn't do interviews. I'm just glad that because he is the publisher [of Interview*] I will never have to interview him. I don't know what I would ask. You should ask his manager."*

Earlier, I asked Jeff, an engineer from Commodore who has been working with Andy for weeks on his new video for MTV, the same question. "I don't know," Jeff said. "He doesn't talk much. He doesn't talk at all. He doesn't do interviews, as far as I know. You guys are really lucky to get an interview with him."

Finally, I ask the Commodore exec who set up the interview in the first place. "Maybe I should ask the questions," he says. "Andy doesn't talk much, and I have no idea how it will go."

Our photographer arrives and Glenn goes up to the video studio to help set up lights. Lunch ends and I follow Andy upstairs to the studio.

"So, you don't do interviews?"

"No," Andy says abruptly. He disappears again. Great.

The video studio, where the MTV video was put together, has chairs, equipment racks, monitors, video editing decks, cameras, lights and two Amigas. Some paintings are brought in. Four by four foot Dolly Parton. Punching bags. Things. Vince Freemont, Producer for Andy Warhol's T.V., has everyone sit and we preview Andy Warhol's Fifteen Minutes (More or Less) video for MTV. The portions done on the Amiga are pointed out. Titles and special effects. Andy has drifted in to watch.

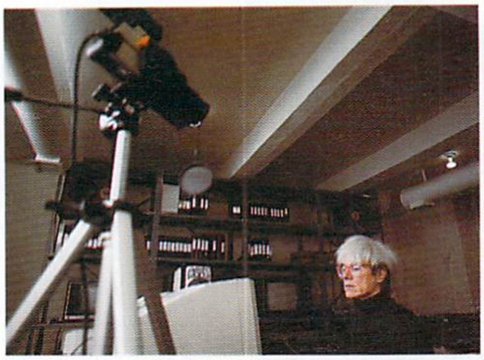
When it is over, most of the people in the room either leave or move or remain seated. A video camera is connected to a digitizer connected to one of the Amigas, and Andy sits before it. Lights are adjusted. The camera is turned on. The software is loaded.

Our photographer begins shooting almost nonstop. He uses a camera with an auto-winder so he can click-zhhh, click-zhhh, click-zhhh as fast as he can point and focus. He moves around the room quickly using up roll after roll of film.

No one is sure who is supposed to be there and who isn't. People wander, people sit, people talk. The engineer plugs in cables, types on the keyboard, moves and clicks the mouse, changes settings.

And Andy Warhol sits before an Amiga that is soon alive.

Images of what the video camera sees are fed into the Amiga and onto the screen. At first there are flickers of color and interference. The camera is pointed at nothing, and then (more for something to focus on than anything else), the engineer points the camera at the painting of Dolly Parton leaning against a rack filled with video tapes.



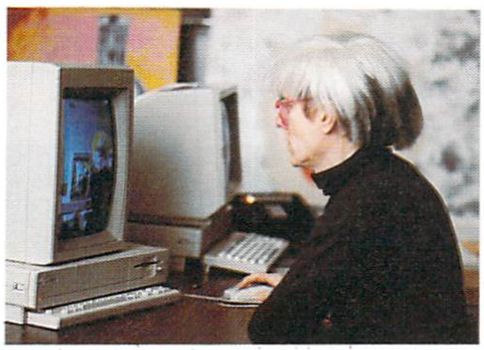
It doesn't really start anywhere. At some point tape recorders are turned on. At another point the software is working. Throughout there is the click-zhhh, click-zhhh, click-zhhh of the photographer's 35mm camera. Andy begins playing with the mouse, and the colors on the screen change with each move and click. He is intrigued with the changing colors and weird effects caused by the camera-light-software-mouse-people combination. ►

◄ *While waiting for the interview to begin, the interview began. More as a conversation than an interview. Andy playing with the computer image, people coming in and going out. Many people asking questions, even Andy asking questions. The photographer shooting from every possible angle in the room. The engineer constantly adjusting equipment. People doing nothing but watching the screen as the colors change or the video camera is moved or the lights are moved or as Andy tries something else.*

A color painting of Dolly Parton is, at first, shades of black, white and gray, but soon is illuminated, replacing the original colors with electronic Amiga colors.

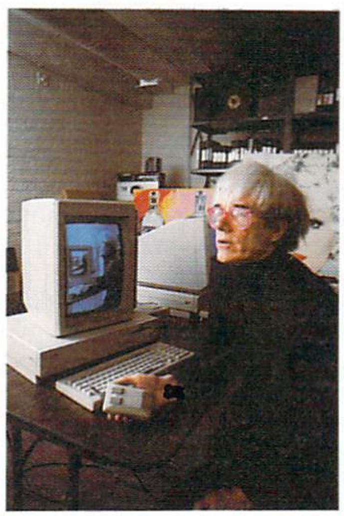
An interview with Andy Warhol, who doesn't do interviews—an artist at the Amiga launch, an artist long before Amigas. Publisher of Interview *magazine. Involved with video, MTV, rock, films, people and things like Amiga computers.*

Glenn: When did you do this portrait of Dolly?
Andy: Last week.
Glenn: Hmmm. Look at that color.
Andy: It would be great to just drop this color in. Oh yeah. So, do you want to ask me any questions?
GSW (Guy Wright): What do you want to talk about?
Andy: Oh, I don't know.



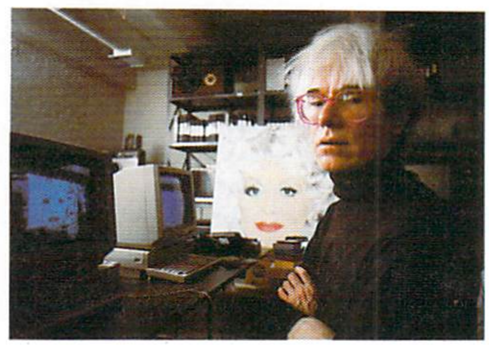
Glenn: Is this the greatest thing since sliced bread?
Andy: Oh yeah, it is.
Glenn: How do you see this work being displayed? How would you show something that you create on an Amiga to the general public?
Andy: Well, we could get a printout. I could just print this out if we had the printer.
GSW: Would you sell the prints or distribute the disk itself?
Andy: Well, this friend of mine, named Jean-Michel Basquiat, goes to the xerox machine and puts xerox all over his paintings. So, if we had a printer right here I could do it this way and just sign it as a print. But, I guess if printers ever get really big, like a twenty by thirty or thirty by forty, then it would really be great.
GSW: So you don't see any problem? Something you do on the computer can be recreated pixel for pixel, an exact duplicate?
Andy: Well, in prints they are supposed to be exact duplicates. So. . .
GSW: But there is a finite number, like print number fifty-six of one hundred.
Andy: Well, you can stop at whatever number you want. Etchings usually stop at a certain number.

[The motorized film advancer on the photographer's camera is furiously click-zhhhing, click-zhhhing, click-zhhhing while people move around the room and Andy taps the buttons on the mouse.]
Glenn: Could you ever imagine monitors sunk into walls in museums or galleries?
Andy: Kids have been doing it already. The Paladium has two big square TV sets going all the time, with about 25 to 50 sets on each side. They haven't done any art yet, but it would be great to do that.
GSW: Like the Limelight with their bank of



TV sets along one wall.
Andy: Yeah, but actually Private Eyes is a video bar. [To Glenn] Have you been there?
Glenn: No.
Andy: It used to be right around here. So if you have a video you want to screen down there for a party, you can. It's not a dancing place. It's just a video bar.
GSW: Do you think that might be the new wave museums?
Andy: Well yeah, actually, when I worked on this at Lincoln Center [the Amiga launch], it was like a museum, because we had a couple thousand people and I was working with it on the stage. It was like a museum because you could show your work.
GSW: Instant museum in a finite time period.
Andy: Yes.
GSW: So it's not a static art?
Andy: Jack [Haeger, Art and Graphics Director at Commodore-Amiga], who was working with me before, uses it more like brushes and paint.
GSW: Do you like working with it?
Andy: I love it.
GSW: Are you going to buy one?
Andy: Well, we already have two, so we are going to buy the printer.
GSW: You are talking about the high-quality printer?
Andy: Well, they had the one at the launch, which was this big [measuring four square inches in the air with his hands]. It was really cute. Very pretty.

[People wander about the room. There is conversation in the background. The engineer adjusts cables. The photographer loads film, shoots, moves, shoots some more. The image on the Amiga vibrates with the changing room lighting and with the pass-



ing of people in front of the video camera. The engineer, finished with cables for the moment, goes to change the video camera angle.]
Glenn: I like the movement.
Andy: Well, it's not. . .oooh [as the engineer moves the video camera, sending electric streaks of color across the Amiga's screen]. . .it is usually still. I guess the cycle is on. Oh, that stops it. Oh yeah, that is nicer.

[The image settles down to a crimson polarized wash of the day-glo Dolly Parton

painting, leaning crooked behind a bank of video production equipment.]

GSW: Do you see this as more video-oriented, as opposed to computer-oriented?

Andy: I think everything... anyone can use it.

GSW: Do you think there will be a rise in personal art?

Andy: That too, yeah. [Crimson changes to mauve to orange to fusia as Andy moves and clicks the mouse.] Well, I've been telling everybody about the machine, but they haven't been able to get one yet.

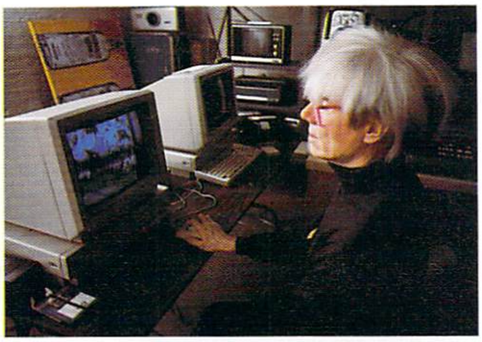
Glenn: Have any of your artist friends seen the stuff that you've done?

Andy: We had somebody come down the other day, and people have read in magazines about the stuff we did at the launch.

Glenn: How do your friends feel about computer art generally?

Andy: They all like it. They have been using the xerox, and they can't wait until they can use this, because there are so many people into xerox art. You do it and then take the stuff to the xerox store and do the prints there. Jean-Michel Basquiat uses xerox. So, if he could be printing out on his own machine, he would be using this.

Glenn: Jean Michel was the artist who worked with you on this? [An illustrated punching bag]



Andy: Yes.

GSW: Do you like the machine because it is so quick?

Andy: I think it's great. It's quick and everything.

GSW: What influence do you think this will have on mass art as opposed to high art?

Andy: Mass art *is* high art.

GSW: Do you think it will push the artists? Do you think that people will be inclined to use all the different components of the art, music, video, etc.?

Andy: That's the best part about it. I guess you can.... An artist can really do the whole thing. Actually, he can make a film with everything on it, music and sound and art...everything.

Glenn: Have you been doing anything with the music capabilities?

Andy: Not yet. We were just trying to learn the art part of it first. [Another color change on the digitized video image of Andy's photographic painting of Dolly. Where there were reds are now blue-blacks, where there was flesh-pink there is now yellow-green.] Oh, this is great.

GSW: Do you think the computer has a limiting effect?

Andy: No.

GSW: Do you think it is open ended?

Andy: Yeah. [Andy is distracted constantly by the changing colors on the Amiga screen. The Dolly Parton portrait is color-animated with each mouse move and click.] Gee, if we had a printer now, I could just print these out and send them to Dolly Parton in all these different colors. It would save us a lot of trouble.

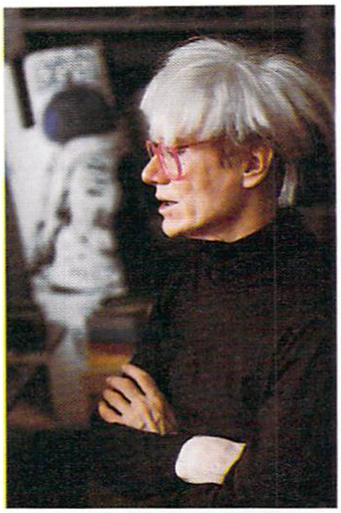
Glenn: Has she seen the protrait?

Andy: No, we were going to send it out. This would be great because I could do it in green and another color.

Exec: Like you did with the Deborah Harry thing?

Andy: Yeah.

[At the Amiga launch, Deborah Harry, singer for the group Blondie, posed before a video camera. A single black-and-white



frame was frozen and transferred to a paint program where Andy filled in colors, added lines, drew with the mouse and finished in ten minutes what would have taken weeks in a studio.]

GSW: How much time have you spent with the Amiga?

Andy: Just the few weeks that Jack [Haeger] was here. We are waiting to get the final software. And then we need Jack back again for a couple of weeks. Has Jack discovered any new techniques?

Exec: I'm sure he has, because the new programs have a lot of different capabilities.

Andy: What are they? What new things have come up in the last few months?

Exec: I haven't even seen them myself. Everyone has been working on their separate piece of the puzzle. But the last time I spoke with Jack, he asked when he was coming back here. So I know that he is eager to come back.

[Another option of the paint program is activated and the colors cycle through the spectrum on their own with a light and color strobe effect.]

Andy: Oh, yeah. Oh, that's weird. Oh, look at that.

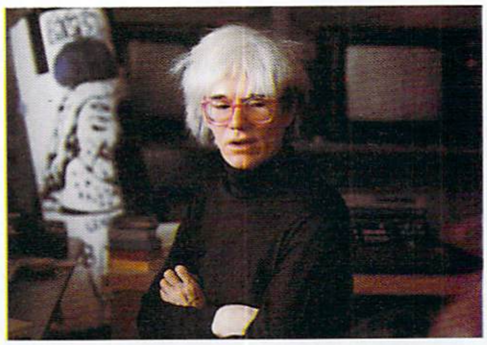
GSW: Is there anything that you don't like about the Amiga?

Andy: No, no, I love the machine. I'll move it over to my place, my own studio. That way I'll be able to do the colors. It'll be really great, and if we can get a printer, I'll do this portrait in four different colors and send them out to Dolly.

GSW: Then you see yourself using it as a major tool?

Andy: Oh yeah. It would save a lot of time. I wouldn't have had to do all these portraits all at once. I could have just picked out the colors I wanted and sent them out, and then picked the one I wanted.

Glenn: Do you think that it will have any

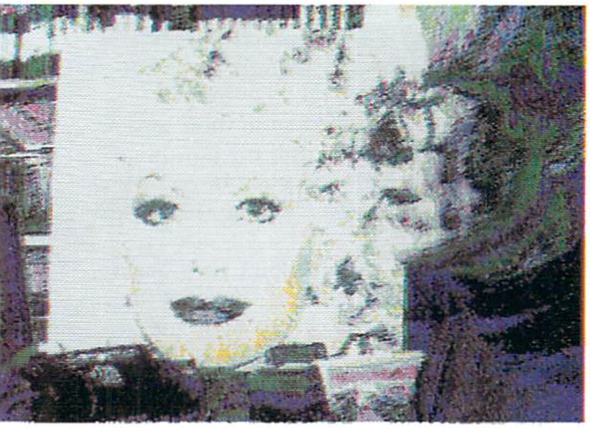


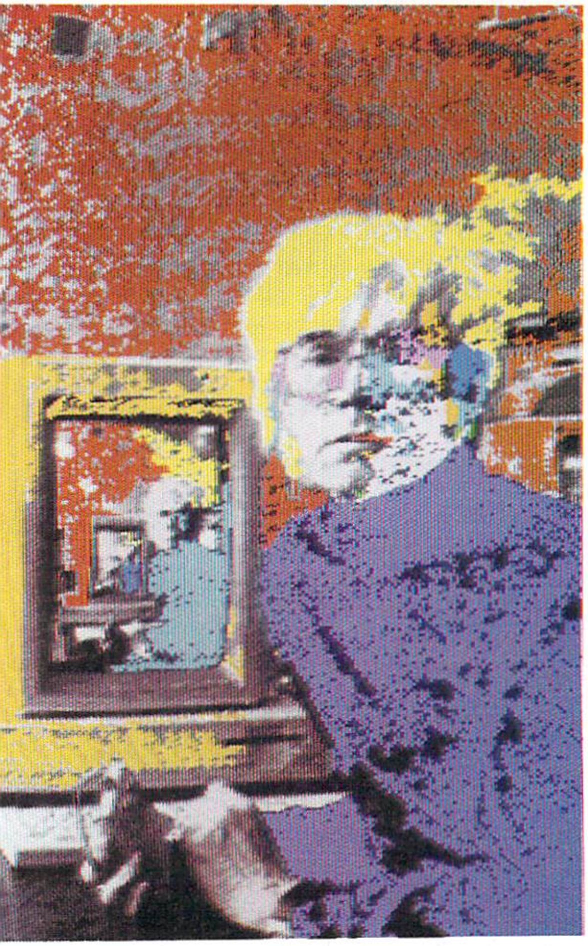
effect on the value of an 'Andy Warhol original'?

Andy: No, it would just be a sketch. Call it a sketch.

GSW: Do you ever see that as becoming an artwork in its own right?

Andy: Oh yeah. Well, actually, Steven Sprouse really did most of his artwork this way. He did his last print, I think, with the planets and stuff, in this way. Beautiful things, geeze! ►





Illustrations above and on following page were done by Andy Warhol

◄

Glenn: Would you ever think of sending them out as finished pieces?

Andy: Well, we are doing that already. After I did that and Steven saw them, he showed me some of his things and they're just great.

GSW: The great thing is that you can play with all the color combinations, take a picture of the combination or make a printout and then decide which combination works best.

Andy: Well, maybe I could take the painting up there and I could do the color variations on it. There must be a printer we could get, even the small one.

Exec: Actually I think we have a larger printer.

Andy: How big is it?

Exec: Eight by eleven.

Andy: Oh really? Could we do that maybe this week?

Exec: Next week.

Andy: OK. If I brought this picture up, could I just do different colors of this?

Jeff: Sure.

Andy: [To Guy] And then you could use this in your article. You could show how I could change the picture. Do you know what day next week? Early next week?

Exec: They're around. It's just a matter of picking one up.

Andy: Oh. OK.

[More adjusting of the camera and painting of Dolly. The photographer is beginning to slow down, but his camera continues to click-zhhh, click-zhhh, click-zhhh.]

GSW: What are the things that you like the most about doing this kind of art on the Amiga?

Andy: Well, I like it because it looks like my work.

GSW: How do you feel about the fact that everyone's work will now look like your work?

Andy: But it doesn't. You just showed me other artists' work in the magazine [*AmigaWorld*]. It looks like the work that I started doing. I still think that someone like a decorator could use it when he wants to show somebody how their apartment would look all in blue or all in white, or... they could just do it so easily. Change a chair or a color.

GSW: Would you ever consider using the Amiga for 'traditional' uses?

Andy: The kids from *Interview* magazine [Andy Warhol is the publisher of *Interview*, whose offices are downstairs] want to steal it already. We just haven't given it to them.

Glenn: Do you think that you might ever use any of the pictures generated on the Amiga in the magazine [*Interview*]?

Andy: Oh yeah. This would be a really good thing for our covers.

GSW: Do you ever play computer games?

Andy: I'm not fast enough.

GSW: There are some slow ones. Interactive fiction. Electronic novels.

Andy: Oh really? [To exec] Are the ad agencies getting the machine yet?

Exec: You got yours way ahead of schedule.

Andy: Oh great!

GSW: How do you feel about using the mouse instead of a paint brush?

Andy: I thought that I would have the pen [light pen] by now.

GSW: Do you find the mouse a little awkward?

Andy: Yeah, the mouse is hard. Why isn't there a pen around?

Exec: Kurta is working on one right now, and we thought that we would have it by now, but...

Andy: Would a pen work the same way? I mean, it could even be a square pen. You could put the ball down here [indicating the corner of the mouse], just holding it differently. If you had a ball at the tip, you could hold it differently.

GSW: A ball point mouse.

Jeff: The one we are working on doesn't even have a cable.

Andy: You mean just like a pencil?

Jeff: Yes.

Andy: Oh, how great. That is going to do so much. You could trace over a picture and stuff like that?

Jeff: Yes.

GSW: With something like this [the mouse], do you miss getting your hands in the paint?

Andy: No. No. It's really great not to get your hands in paint. I don't know. They always say that plastic paint is bad for you. Is this bad for you?

GSW: Nowadays they say that it is the way you sit in the chair in front of the display.

Glenn: Could you do a self-portrait?

Andy: Oh sure.

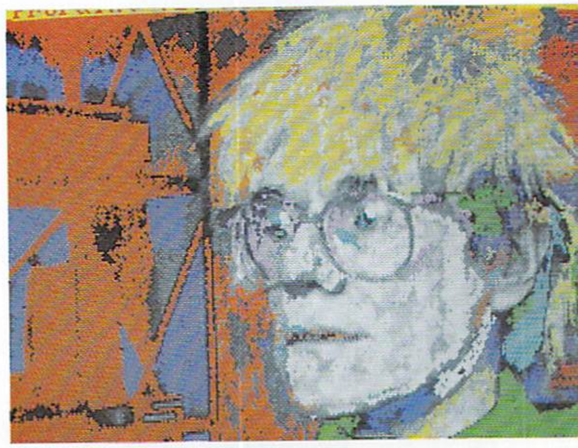
[The video camera is moved to point at Andy, and his face appears on the Amiga display. With Andy on the monitor and Andy in front of the computer and Dolly in the background, there is photographic temptation.]

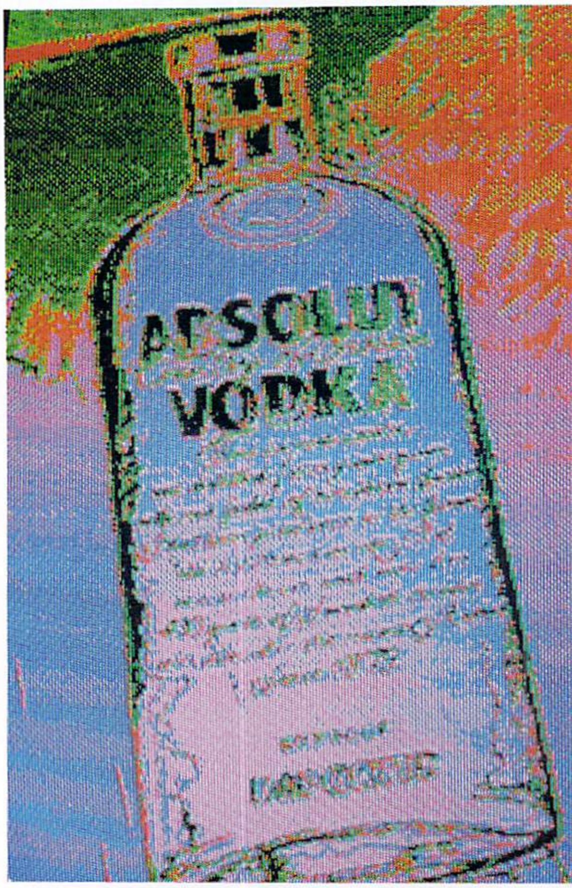
Photographer: Could you lean forward? I want to get both you and Dolly in the same shot. [Andy leans.] That's excellent. That's good. OK, thanks.
Glenn: Did Dolly Parton come to you to do the portrait?
Andy: I did it when I went out to the Madonna wedding.

[Back to the self-portrait. The engineer adjusts colors, levels and gray scales until Andy is satisfied.]
Andy: There, that one [indicating a straight black-and-white video image of himself].
Jeff: Like that?
Andy: Uh huh. [Already working on coloring in the on-screen image of his face] God, isn't that funny?
GSW: If there was something that you could add to the Amiga, what would you add?
Andy: The only thing that I would add would be the pencil [light pen]. That's the only thing.
GSW: What about working on the screen itself, with a touch screen?
Andy: Well, that would be great. That would be good with the pencil, because you could add in the color and stuff like that, but with a sharp point, you could get the lines easier.
GSW: Have you ever done anything with computers before?
Andy: No, this is the first time.
GSW: Why haven't you used computers before?
Andy: Oh, I don't know. MIT called me for about ten years or so, but I just never went up. . . maybe it was Yale.
GSW: You just never thought it was interesting enough?
Andy: Oh no, I did, uh, it's just that, well, this one was just so much more advanced than the others. I guess they started all that there, all the kids from college who went to California. Weren't they the inventors?
GSW: Do you think that computers will play a larger and larger role in art?
Andy: Uh, yeah, I think that after graffiti art, they probably will. When the machine comes out fast enough. It will probably take over from the graffiti kids.
GSW: You like graffiti art?
Andy: Oh yeah, I do. I think it's really terrific.

[Andy becomes absorbed in the self-portrait. Adding colors, lines, filling in areas, changing things. The mouse is moved and clicked and clicked, but his eyes never leave the screen. People continue to move around the room. Some leave, some enter, móst just stare at the Amiga screen while the black-and-white Warhol changes from a digitized video frame displayed on an Amiga computer into a full color self-portrait, a Warhol-painting-Warhol original. The iterations of Andy Warhol painting on an Amiga an Andy Warhol painting of Andy Warhol sitting at an Amiga doing electronic painting become too confusing to follow. Vince Freemont, producer of Andy Warhol's T.V., enters and stares with the rest of us.]
Vince: You want some air conditioning in here?
Jeff: I turned it off, because of the fan.
Vince: How about opening the door?
Jeff: Fine, thanks.

[Squeak. . . door opening. . . crash, rumble-rumble-rumble, metal door rises.]
Vince: [Stepping outside onto the roof] I love these skylights.
Andy: [Rising for a moment to look outside. The image of his face on the screen, partially colored, stares at an unseen monitor.] They were supposed to be party tables.
Vince: Those skylights are being knocked down now.
Andy: Are they? [He steps outside.] Again?
Vince: People from the other buildings throw stuff on them, and since they put in the wrong weight of glass, they have a tendency to break.
Andy: I haven't seen the back in a long time.
Vince: OK. Everybody go outside and take a break for five minutes. Is that roll up still there? Andy? Andy?
[Andy returned and the self-portrait was finished. People wandered off. We had to leave. Other interviews. Other. . .]■







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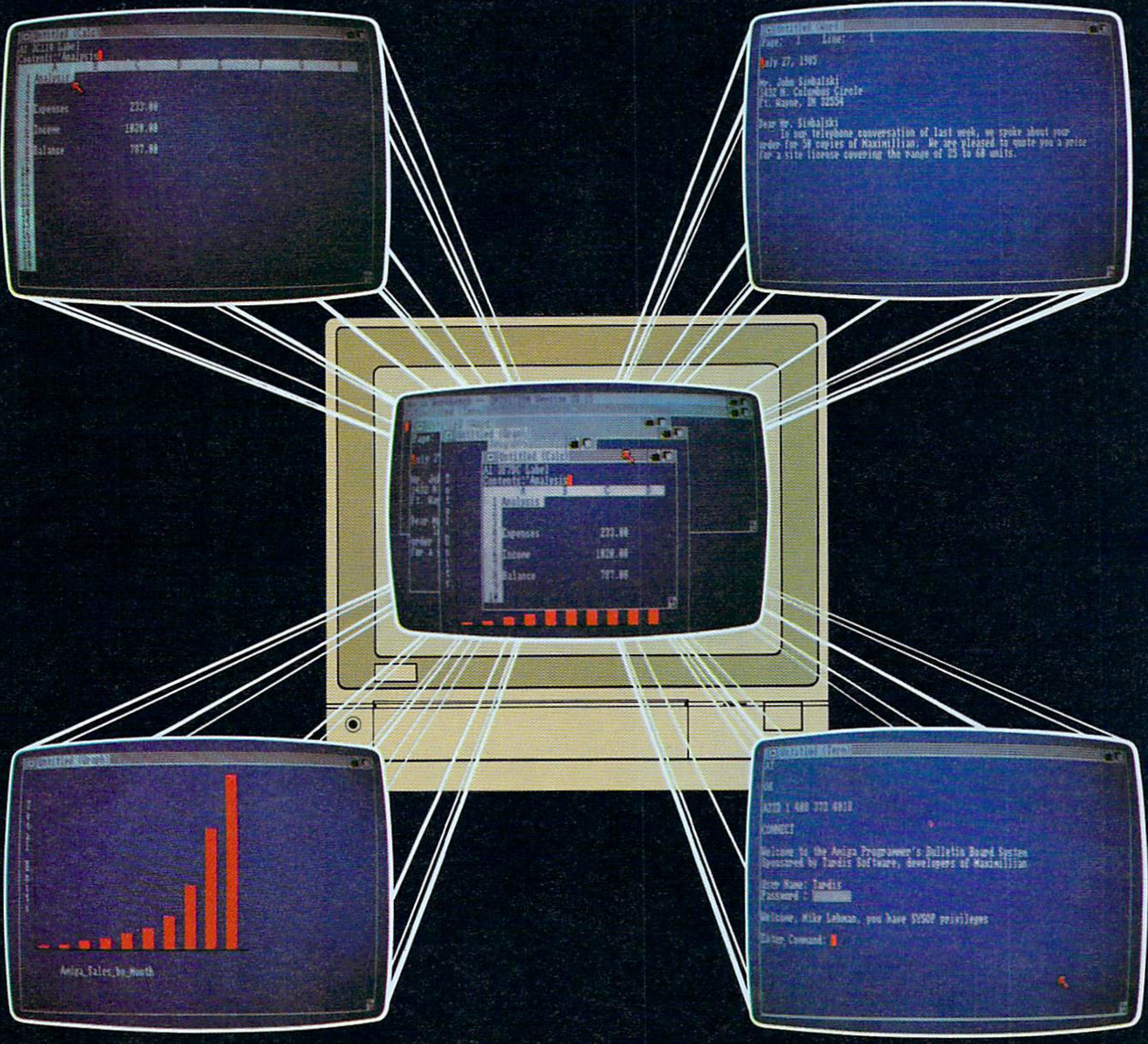
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Illustration by Steven Lyons

Computer Art: Is It Really Art?

By Vinoy Laughner

Can a computer, austere and logical, be a tool for creative personal expression?

Modern technology has infiltrated and transformed just about every area of human activity, including the visual arts. After centuries of relative continuity in the materials and processes of two-dimensional visual art, the last century and a half have brought about a revolution in this area. These new methods, offsprings of the dramatic rise in applying modern science through technology, have captured the imagination of those in the creative fields, as well as the general public. Since Louis Daguerre popularized the process of capturing "real" images on sheets of copper coated with silver nitrate (the daguerretype), which led to modern photography, how we view ourselves and visually represent our world can never be the same.

In this article I will give a brief overview of these new visual technologies and then focus on computer art and its potential use for personal artistic expression.

Seeing History

With the advent of motion pictures, another watershed in the history of visual technology was reached. (Where would we be today without good old Thomas Edison—in the dark?) The march of science made it possible for many artists, practitioners of the ancient craft of acting, to walk into the lives of their audience in a dramatic new way, and to preserve their accomplishments on film for us to see decades later. We also could now document our history on film: war, progress, presidents.

By the time I was growing up, my world was inhabited by Popeye, Zorro and the Mouseketeers. Once again technology opened a new window into a land of creativity and imagination (some would say also a land of mediocrity and decadence). It is impossible to imagine America in the sixties without the tube. Our perceptions of the world changed from our living rooms. One minute we were on Gilligan's Island, the next in Vietnam; we rode from the Ponderosa to the streets of Montgomery in a flash. Our opinions changed, we changed, our culture changed. Our knowledge of world events hinged on signals that fired electrons at the back of a fluorescent screen.

Today, video is the rage. VCRs are the newest "must have" machines and many children spend more time with MTV than ABC. (And I don't mean the TV Network!) We have much to gain from this new technology, regardless of the potential abuses. The achievements in film, television and your own "home movies" are now comfortably and conveniently accessible right in your own home. Why wait for film to be developed when you can view homemade movies immediately, with sound? You can tape over those embarrassing parts. Many people now only go to the movies because the current box office fare isn't on videotape yet.

Finally, we have computer graphics, or if you will, computer art. This new field, based upon what so many consider an austere, cold technology, is a radically different world of images. It doesn't have the same kind of appeal as a familiar face on the TV screen, but along with the technology it rides on, it is surely going to change the now and future of what we see and how we see. Whether you know it or not, TV today is filled with the products of this new and revolutionary form of art, and the hottest new movies often depend upon the kinds of effects only computer graphics can make feasible. What we see is being changed by computer art.

How will the traditional art community accept computer art? This is not, after all, just another form of electronic entertainment; it involves personal creative input. Where will it fit in? These are very significant questions. Two things are for sure, it's here to stay and it will dramatically influence visual art in the future.

Art of Distinction

The modern visual technologies are usually associated with their use in "popular culture." The people who create in these fields are considered artists—we would consider the producers or writers of a film to be artists of a kind; we refer to artists of screen and television—nevertheless, we have become accustomed to classing those artists in "traditional" fields of two-dimensional visual art in very separate and special categories from those in the new-tech mediums. We have an area cloistered for them called Fine Art. It's obvious ►

that they do different things and yet the creative spirit is still the same; but often the division amounts to, lamentably, an elitism—snobbery. Today, this High Art snootiness often has a distinct rarified smell: Money. Upon what grounds can we continue to maintain this distinction? The question should be one of quality (whether computer art or paint), shouldn't it? What valid measure do we enlist to sanctify certain mediums?

History of Security

Artists working in the traditional mediums of two-dimensional visual art (i.e., painting, printmaking, drawing) have the comforting benefit of long and rich

This is not just another form of electronic entertainment; it involves personal creative input.

historical traditions. Precious few, yet monumental, advances have come about in the materials and procedures of two-dimensional art. Beyond the "inventions" of painting or drawing themselves, it isn't hard to recognize the pivotal points in art history. (I am focusing on Western art.) The development of oil paints, usually attributed to the late medieval Flemish school associated with Jan Van Eyck, the use of highly sophisticated perspective accomplished by Renaissance masters, and the veritable "discovery" of color by the Impressionists, especially Claude Monet, qualify as such truly revolutionary and historic advances. Western art, its materials, methods and powerful traditions, make it a very conservative discipline indeed; artists have benefited greatly from the perspective and security provided by such a tradition. All of us are richer because of their accomplishments. Accepting a new medium, especially one coasting on baffling technology like computer art, could prove traumatic.

Even the Modern art movement, in all its supposedly radical glory, was and is conservative in this regard. The difference in a work by Picasso lies in the message or subject matter, not the medium.

Now to place the invention of computer graphics on a level with the rise of oil painting would be for most artists sacrilege. I would tend to agree. Yet, I don't see computers threatening the hallowed shrine of Art, for I view the popular notion of art as some sort of mystical vocation as repugnant.

An artist's gift is in seeing a different way, in insight, not in having some channel to "Truth." Artists have a role and responsibility just like anyone else; what they do is necessary and important, no matter what some say about artists being in the business of making things people don't need. Every culture has produced and cherished artwork. That's a pretty good argument for its necessity. Maybe we have a problem understanding the necessity of art today because we have fostered a High Art dedicated to producing objects solely for passive contemplation in antiseptic shrines (museums); esoteric objects for a cultural elite.

Misoneism

It is feared that the artwork produced on computers will rob us further of our personality and humanness. The hallmark of art has been the mark of individual creativity. It is a valid point. (Still, oil paints and lithography are technologies too.) A good argument could be made that the more complex and larger the thing you place between yourself and your art, the less of yourself will end up there. Powerful argument. However, the degree of control and immediacy between you and what you create on an Amiga is astonishingly high. A computer is just a thing; we control it, it doesn't control us or hold us as its slaves. (If you want to get the best of a computer sometime, turn it off.)

Are we less human because we put tires, nuts and bolts between ourselves and the road, instead of just our humble feet? If you want to see cold, impersonal artwork, look at some of the stuff being produced by some human artists today. So much of it is shallow, banal and empty. You may strongly disagree, but my point is that impersonality is not intrinsic to computer artwork; you'll only lose as much of yourself as *you* allow.

If you're willing to rise to the challenge, a computer can be a fascinating tool (albeit awesomely sophisticated) for your personal creative expression. After all, you don't have to know the chemistry behind oil paints to use them, why worry about what's going on inside that forbidding little box? The knowledge may prove interesting, but it definitely isn't essential.

True, you will not get dirty creating artwork on a computer. You will not notice those old familiar smells, like that from turpentine or poppyseed oil. (If you do smell something, I'd turn the computer off soon.) Still, you can create marvelous things on that screen. They are not paintings in the traditional sense, but they can be complex, beautiful, vibrant. You can make things move, sparkle, colors pulsate or shift, or simply come up with original stationary designs. The object is to master this thing's capabilities to use it to say what you want to. The Amiga doesn't create graphics or artwork, but with one, *you* can.

Does Computer Art Exist?

If computer artwork is compared to traditional mediums, it is easy to find fault. No computer screen resolution can equal the nuance or subtlety of oil paints, for example. Yet, is the object to mimic another medium? Isn't it something spectacular in itself? If I want to do a

watercolor, I'll use (that's right) watercolors. I would rather use the computer for its unique features, not to try to feign another medium.

To be fair, and to approach a justified perspective, the radical difference and newness of computer art has to be considered. It falls into the general category of electronic visual technology, but also shares much in common with traditional two-dimensional art: line, composition, color—in short, design. You can combine artwork and video material, save, alter and duplicate works and create animation. The medium is radically different; the future appears to be the limit.

It's also more than just a spectator sport, like TV; it is an activity that demands involvement. Your imagination *will not* be at the mercy of someone elses'. You can't sit back and just watch it happen; you have to take the initiative and make it happen. Creating art is always like that.

Creative Computers

The fact that computers will soon be a common feature of everyday life that we take for granted (for many they already are) is reason enough to demand that they be creative tools. Why should we settle for a computer that only satisfies a narrow aspect of what we are when these machines are becoming so involved with activities we have previously associated with ourselves, and particularly our minds. We aren't made of only logic, business, electrical impulses and mathematics; we are also made of feelings, creativity, ideas, play. Why in the world shouldn't we have holistically concieved computers?!

I'll submit what I consider to be one major advantage of artwork created on a computer. One which I feel alone makes computer artwork worth pursuing. It has *light*. The Impressionists lamented the fact that, no matter how bright and pure the pigment, light cannot really be captured in oils. This thing glows! In a dimly lit room, I find myself marveling at the illuminated colors on the Amiga's screen. I've spent well-loved time before a canvas, but this is something different, it's unique. The challenge of this lighted screen, I believe, opens up a vast range of creative possibilities.

I have written this as an artist. I have a deep respect (love) for our great artistic past. I've spent a lot of time in those "antiseptic" museums. I also know that this is the twentieth century; computer art can't be brushed aside or simply dismissed.

The artist you will see with this new technology won't be some glossy movie star, and it won't be a bunch of plastic, glass and electrical components (the computer), it will be you. Computer art *does* exist, as soon as you make it. Our challenge is to direct this medium to its most meaningful and expressive application.■

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Socrates (speaking to Protarchus): "Now does it occur to you. . .that the majority of the arts, as also those who are busied therewith, are in the first place concerned with opinions and pursue their energetic studies in the realm of opinion?"
—from the Philebus dialogue, Plato

Artists and the Amiga

By Abigail Reifsnyder

Virtually everybody agrees that the graphics capabilities of the Amiga are technologically incredible. Yet, do graphics capabilities lead to artistic possibilities? Webster's dictionary defines graphics as "the art or science of drawing a representation of an object on a two-dimensional surface according to mathematical rules of projection." Sounds kind of cold and impersonal—the kind of thing many artists would reject out of hand. Even if this is simply a case for semanticists, though, the question remains: Just because you can draw on the Amiga, does that make it an artistic tool?

Taking the words of Plato to heart (if perhaps out of context), I sought out four artists to gather their opinions, using, of course, the Socratic method (albeit without Socrates' great wisdom and sense of humor to aid us in our search for the truth of computer art). None of them had used a computer before, and each responded differently. With only four artists, we still managed to run the gamut of opinion, from one who dismissed it immediately and irrevocably to another who believed it opened up a wide variety of possibilities not achievable through other media.

The four artists were Paula Hible, Daniel McDonald, Rick Prol and Caren Scarpulla. Paula Hible works with a technique called gum bichromate, a process that combines photography and painting in a unique way. She mixes the emulsions herself, and her portraits and still lifes are washed in soft colors. She also does freelance work as an illustrator and artist for magazines.

Daniel McDonald's paintings draw on the influence of Piet Mondrian, using grid forms but adding circular and diagonal shapes. The repetitive qualities of his paintings reflect nature's ever continuing cycles. He is also the art director for two magazines, Audio Times *and* Autosound & Communications, *which plays a major role in his painting. His works have been exhibited in various group and solo shows in New York City, and several hang in private collections.*

Emaciated victims of urban violence populate Rick Prol's paintings and installations. Paintings mounted in dilapidated window frames with shutters let you know you are looking in at someone's private experience. In spite of the bold, dark colors depicting often gruesome scenes, they are not without humor. His works have been shown in many solo and group shows in New York, San Francisco and Europe.

Caren Scarpulla's neo-pop paintings feature scarred women with beehive hairdos and spiked heels. Her cartoony, hard-edged style is reminiscent of TV cartoons of the '60s, but despite its playful quality, portrays women as victims of life. Caren also runs a gallery on the Lower East Side of Manhattan and does freelance illustration for magazines. Her works have been shown in New York, San Francisco and Montreal.

I spoke with each artist individually and as a group as they doodled on the computer. Following are excerpts of those discussions.



Four New York artists gathered at the B-Side Gallery in Manhattan to discuss their views on Amiga artwork. From left to right: Rick Prol, Caren Scarpulla, Daniel McDonald and Paula Hible.
Opposite page, from top to bottom: "Going Shopping With Baby," by Caren Scarpulla; "Luxury High Rise," by Daniel McDonald; "Florida," by Paula Hible; "No Black Cats For Sale," by Rick Prol.

Paula Hible: It [creating art on the Amiga] doesn't seem honest because you can't see what's been done. You're not making real decisions anymore; there's no heart in it. If there's something you don't like, you can just blot it out and nobody can know you've done it. With an artist like DeKooning, you can see, if you care to look, where he erased or covered up stuff.

Daniel McDonald: I think that's a good point, but I feel as though this is a totally different medium. I feel as though this will never replace any other medium or be the final thing in art. I think it's one interesting variation and a lot of great things can be done with it.

Caren Scarpulla: You can put all your accounting on it, do all the stuff a regular computer would do, plus it has this. So if artists are going to buy computers just to do their bills and accounting, they may as well go and buy this—then they can fool around with it. So not only would you have a computer to do business, but you'd have one to draw on. I mean, I'd definitely buy one because I need to buy a computer, and I definitely wouldn't buy a stupid ordinary computer.

Daniel: I think this thing is probably more of a breakthrough technologically than artistically. It's not like the discovery of canvas or oils. [Looking at pictures in *AmigaWorld*] Why do this? These pictures would look better in oils, whereas what you can draw on this computer has a new, though primitive, look. There's still a consistency in what I do here with my work, but there's no reason to do the same thing on a computer—it's not using the medium the way it could be used.

Paula: What gets me is what do you get for your trouble after this? You get this thin piece of shitty paper with a printout on it. I don't respond to that.

Daniel: That's what I meant by saying it's a technological breakthrough, but not an artistic one.

Paula: I mean, the stuff this prints out on is horrible. Surface is important, and there's no surface with this.

Caren: You know what I could see: you could mix something that was printed out on a computer with oils like a collage. You know, you could do something on a computer, have it printed out and slap that on a canvas—some people use color xeroxes that way.

Rick: I can see a whole room of these—a big sort of installation—and then you're really using it. Like 20 of these on a wall with weird heads on them. In other words, using the thing as something other than just the limited image—playing around with the whole thing.

Paula: If you could get 20 computers together, that would be a statement in itself.

Rick: Its strength in a way is its limitation; it's kind of ready-made. It's like the limitations of video. I use Nam Paik as an example because he did that a lot, he really stretched video in a sculptural way. He made a totem out of video, like chambers where you would go in and lie down and you'd look up to the screen. The result with this is still going to be pretty much the same, but not as surprising. Film is still more manipulatable. This is still a limited kind of thing.

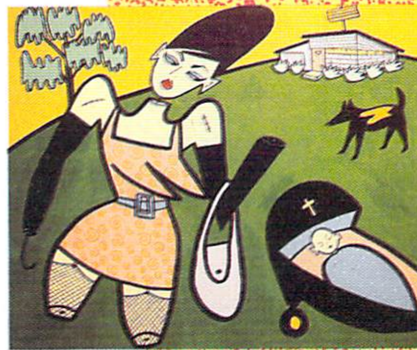
Caren: I think it's good for commercial artists.

Paula: That's true because the end result is not the printout but where it's going after that.

Daniel: I think it'd be a nice idea to use this and then paint on top of it like a collage. I mean, if you wanted to do an illustration, you could illustrate it with the computer and then sharpen it up with paint or ink.

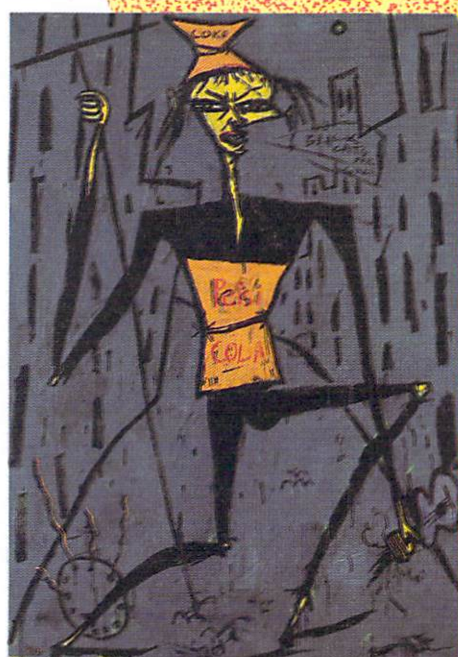
Rick: The thing is, this is basically drawing with color. So it's just a drawing medium, really.

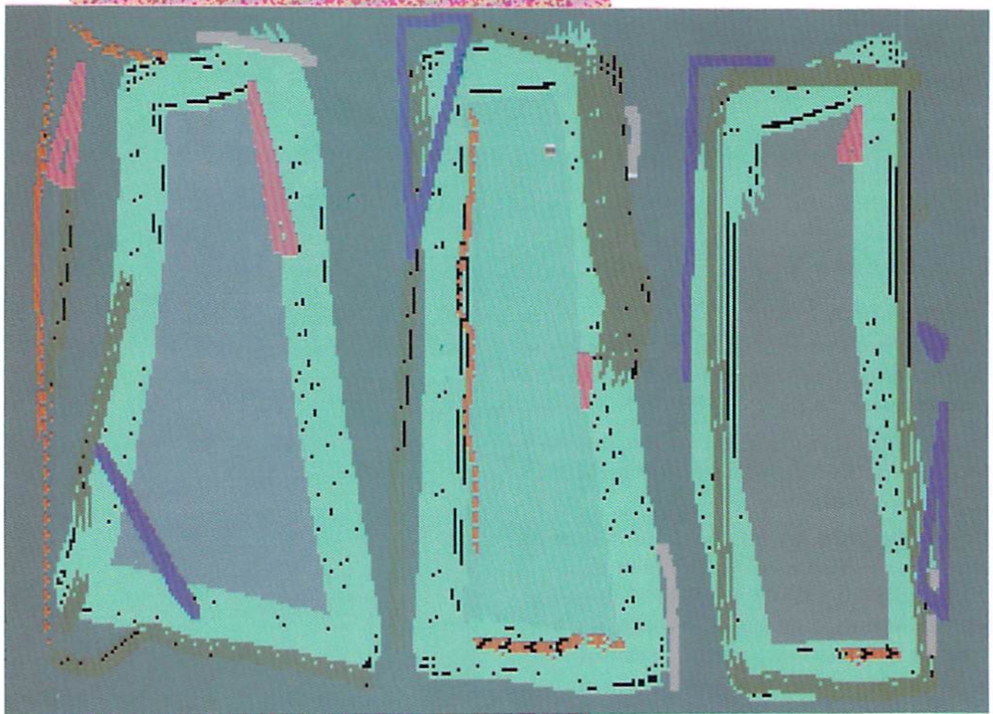
Daniel: Well, you could treat it like a painting, overlaying color. ►











Amiga artwork by Daniel McDonald

◀ **Caren:** It seems like you can't get different textures because you always have those little lines [referring to raster lines on screen].

Paula: What's tricky about this, too, is that it's kind of seductive because it's illuminated. It's like when you shoot a transparency, you have a slide, it looks great and when you have it printed, it looks flat. That's not a direct translation. This [pointing to screen] looks beautiful, but if it were printed out, it would be dead. I notice that the things in the magazine look kind of dead. Probably when the artist was doing them, they looked great because they had the light from the screen.

"I can see a whole room of these—a big sort of installation—20 of these on a wall with weird heads on them."

Rick: Maybe we don't give it credit because it seems so ready-made. In other words, it's not like the genesis of the oil medium or tempera; those were real breakthroughs because they're really pliable. With this, you'll learn all the variations on something and that's that. It's like those computer games: once you get it down, then you have it. I made the analogy to checkers and chess. It's also like Dan Flavin, who uses the fluorescent bulb. The bulb itself is, well, a sculptural thing; it is what it is, it's completely it. I mean, you could bend it or something, but he doesn't. It's straightforward.

Daniel: It's almost like color forms. But who knows what could happen, it might eventually become more sophisticated. It's relatively new and in a way it's just sort of easy to laugh at it and say "Are you kidding?" I guess I'm fairly open to it. I was talking to this one guy at a group show I had last month and he said, 'Did you ever think of looking into computers?' And I said, 'Well, not really. Why would I do that?' And he said, 'Well, because of your repetition, your patterning, you could get so much more out of it.' But I feel as though it's really not the same as getting yourself dirty and getting into the paint. There's just something about working on a two-dimensional surface, dealing with the paint and getting your hands and feet dirty and just generally getting into it. Then he said, 'Well, maybe you could just use the computer and then jump into a tub full of paint.'

Caren: It's definitely not a case where you could just switch over from paint to computer.

Daniel: Yes, it'll do things I wouldn't consciously do. You couldn't do this just once or twice; it would have to be a commitment. It's not like switching from etching to wood cuts. But anybody could create art with it—especially if you're into color field work, laying on of colors and patterns.

The pictures I drew on this definitely had a much louder palette because the colors are so much more electric on this monitor. But I spent time trying to adapt to something that I might possibly do if I was to use this as a medium. And I enjoyed it. I wouldn't use it as the final thing and just work on computers the rest of my life, but I think to be fair to it, you'd have to spend a fair amount of time and really get involved in it. It's like learning to walk again or writing for years with your right hand, then switching to your left hand. You're doing something you know how to do, but you're more self-conscious. You can still use your basic training, exploring colors and interaction between colors, like using complements to get an impressionistic look.

Rick: There's something different about this than painting. I think it guides you more. Drawing with a pencil is a more spontaneous thing, but images are images. The thing that distinguishes them is the signs and symbols that you use; it's the concept behind them. I mean, a rock is a rock, but you wouldn't really think that a Gucci and Michelangelo's David were made of the same thing. The computer seems so concrete and set, but how you use it could become very personal.

I think I like its inherent quality more than its drawing capabilities. If you look at that [pointing to monitor] and consider it visually, that's really beautiful. I mean, there's nothing in the room that's more. . .well, it's really got something.

Paula: But part of that is because it's illuminated.

Rick: Yeah, it's a beautiful stained-glass kind of thing, but these are more interesting [pointing to paintings] in a human sort of way, a psychological way, where you know what the person really means. It's not as mechanical. This [computer] is not as personal. It's just a different quality, too. It doesn't mean it's any worse or anything, it's just that visually this [screen] is very striking.

Daniel: Yeah, well, it has a mechanized feel to it, whereas if you look at a painting like this one here, you can definitely see the strokes, you can imagine what kind of emotion and sweat and muscle went into it.

Rick: The thing is, though, you could paint pictures that have complete anonymity in them. A lot of pop art is like that. Some of Warhol's silk screens are like that, though they still have a human quality to them. Even Lichkenstein's stuff, which is very mechanical, still has a human feel to it. Who else? Well, even photo-realism is that way.

Paula: Well, I think if you were in a room with this [screen] and that [painting], you could live with the painting a lot longer than you could live with the screen. That would become interesting to you, whereas you'd lose interest in this.

Rick: Yeah, I almost feel like they're just two different things. You can't put it on the same level.

Daniel: Yeah, it's like comparing apples to doughnuts, you know, etching to a painting.

Rick: Painting's also an historical thing; it's got such a legacy. This is a new thing and technological, though the medium is still drawing.

Caren: Would it be possible to buy a disk that had a whole series of work by one artist, so that if you had one of these computers, you could just slip in the disk and look through all of that artist's work? I can see that working: somebody buying it as art. They could go into an art gallery and buy a disk by some artist, if the artist did a series on computer, and then take this disk home and put it on their computer and keep it set up in front of their minimalist couch and say [to guests], well, there's art, there's Keith Haring, there's Jean-Michel Basquiat. Then they could change it; they wouldn't have to worry about living with it forever. I could see that happening.

Paula: That's like buying a fireplace tape for your video recorder.

Daniel: You know, if I did a picture on this, a painter might appreciate what I did, but a computer person would know that I just pressed a couple buttons.

Paula: Well, that's always true. If you're a painter, that always takes some of the mystique out of it because you know how it was done. The same thing could hold true for this.

Caren: People always say that the computer will replace such and such. But the com-

"Painting's also an historical thing; it's got such a legacy. This is a new thing and technological, though the medium is still drawing."



Amiga artwork by Rick Prol

"I notice that the things in the magazine look kind of dead."

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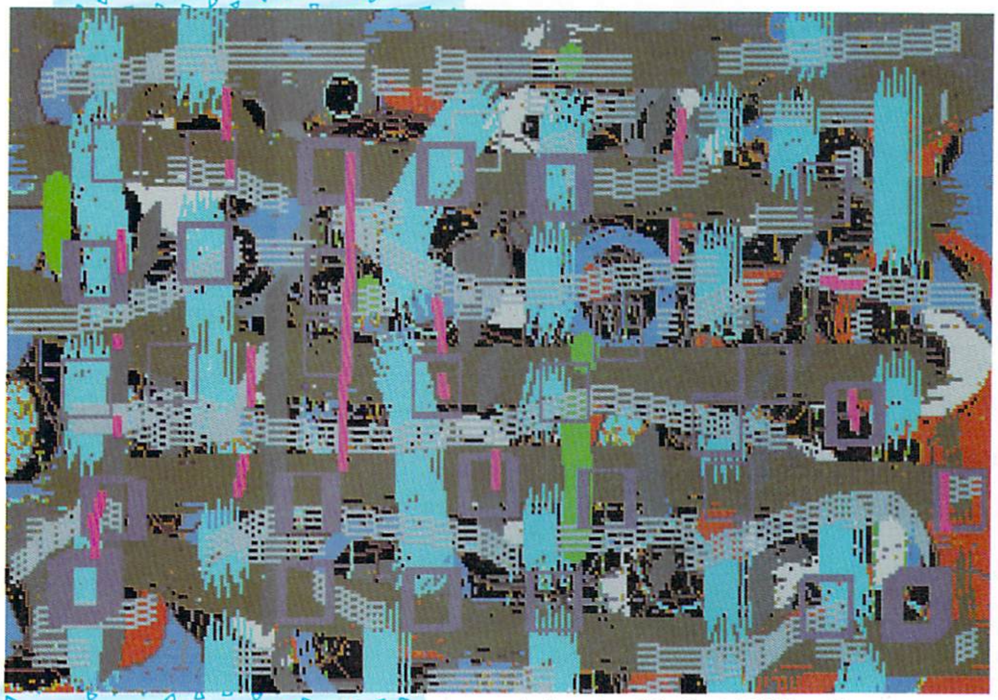
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puter is a computer; it's a thing in itself. It could have all kinds of possibilities just as a computer.

Paula: For somebody who's serious, I guess this is a great scratchpad. Maybe I'm just being snobby because I'm involved in something that's more tactile, but I'm not sure we have anything in common with this just because it has colors and a palette.

Caren: Well, I like it. I would buy one and once I learned how to do everything with it, I *would* do everything with it. I would act like I was making a painting, right? I would keep it in memory, store it, and then do a painting from it. Still the act of doing it on here is different from the act of doing a painting. You actually see it happening quickly in front of you.



Amiga artwork by Daniel McDonald

"Would it be possible to buy a disk that had like a whole series of work by one artist, so that if you had one of these computers, you could just slip in the disk and look through all of that artist's work?"

Rick: And no mess.

Daniel: No muss, no fuss. You don't have to mix anything to get that green or orange or whatever. You can change the colors by pressing a button, but there's something different about physically dropping in colors and mixing things up and stirring and testing and putting it on the canvas.

Caren: I wouldn't miss that—getting dirty. That's a chore.

Paula: That's the fun part. It's part of the process. The rest is just an excuse for mixing paints.

Rick: It is the fun part.

Caren: It is, but it's a pain, in the long run.

Rick: You should have this here for an artist's opening, and the artist could be back here working on it. That would be neat, because if people liked your style, they could find it on the computer here.

Caren: Yeah, and with a printer, they could buy it.

Paula: But it's lousy paper.

Rick: So couldn't they make one so you could use 100% rag?

Paula: It's got to be a paper that can be fed through the printer. When color xerox first came out ten years ago, I really wanted to do color xerox on paper that I could stick through an etching press so I could texture the paper later. And color xerox was useless to me because you couldn't get it on decent paper, something you could work with later, something that would last. And that's my suspicion with this too. One would question the archival value of, well, lots of things today, but this is something you couldn't even manipulate. The paper's awful. You wet it, it falls to pieces. What you can do with it is so limited that it almost means that what you see is what you get—it can't stand to be handled. So it's really questionable if paper would allow it. That's why I think it's good for reproductions, like for an illustrator, because that's not the final product, it's going to go into print somewhere.

Caren: Well, then it would be a temporary thing, like a post card. I could see it on cheap paper being sold cheaply. And it makes the art more accessible to your average person. You sell it for $1—it makes the art available to anyone who wants it. They can tack it on their refrigerator or whatever.

Rick: It's "state-of-the-*art*," right? Right! I think it's great. ■

Address all author correspondence to Abigail Reifsnyder, 217 E. 85th St., Suite 396, New York, NY 10028.

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Outstanding Amiga Software

Amiga HotList

Here's our understanding of prices and availability as we're preparing this ad, but new products are becoming available daily. Call for the latest additions!

PRODUCT	PRICE	AVAILABILITY
Activision		
Hacker	**$CALL**	DEC 1
Mindshadow	**$CALL**	DEC 1
Aegis		
Amiga Draw	**$149**	CALL
A-Squared		
Digitizer	**$CALL**	CALL
Borland		
Turbo Pascal	**$CALL**	Q1 '86
Broderbund		
Print Shop	**$CALL**	CALL
Chang Labs		
Rags To Riches Accounts Payable	**$CALL**	NOV 1
Rags To Riches Accounts Receivable	**$CALL**	NOV 1
Rags To Riches General Ledger	**$CALL**	NOV 1
Rags To Riches All Three	**$CALL**	NOV 1
Cherry Lane		
Harmony	**$CALL**	CALL
MIDI Interface	**$CALL**	CALL
Texture	**$CALL**	CALL
Eichner		
Disk Holder	**$ 25**	CALL
Disk Holder With Lock	**$ 33**	CALL
Electronic Arts		
Archon	**$CALL**	DEC 1
Arcticfox	**$CALL**	DEC 1
Delux Music	**$CALL**	CALL
Delux Paint	**$CALL**	JAN 1
Delux Print	**$CALL**	FEB 1
Delux Video	**$CALL**	CALL
Financial Cookbook	**$CALL**	NOV 1
Marble Madness	**$CALL**	CALL
One-On-One	**$CALL**	DEC 1
Return to Atlantis	**$CALL**	DEC 1
Sky Fox	**$CALL**	DEC 1
Seven Cities of Gold	**$CALL**	DEC 1
Everyware		
Musicraft	**$CALL**	CALL
Floppy Clean		
Head Cleaner	**$ 21**	CALL
Keyboard Cleaner	**$ 19**	CALL
Mouse Cleaner	**$ 19**	CALL
Hayes		
Smartmodem 1200	**$359**	CALL
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Hitchikers Guide	**$CALL**	CALL
Planetfall	**$CALL**	CALL
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All other text adventures	**$CALL**	CALL
Innovative Technologies		
The Easel	**$ 14**	CALL
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Maxicorp		
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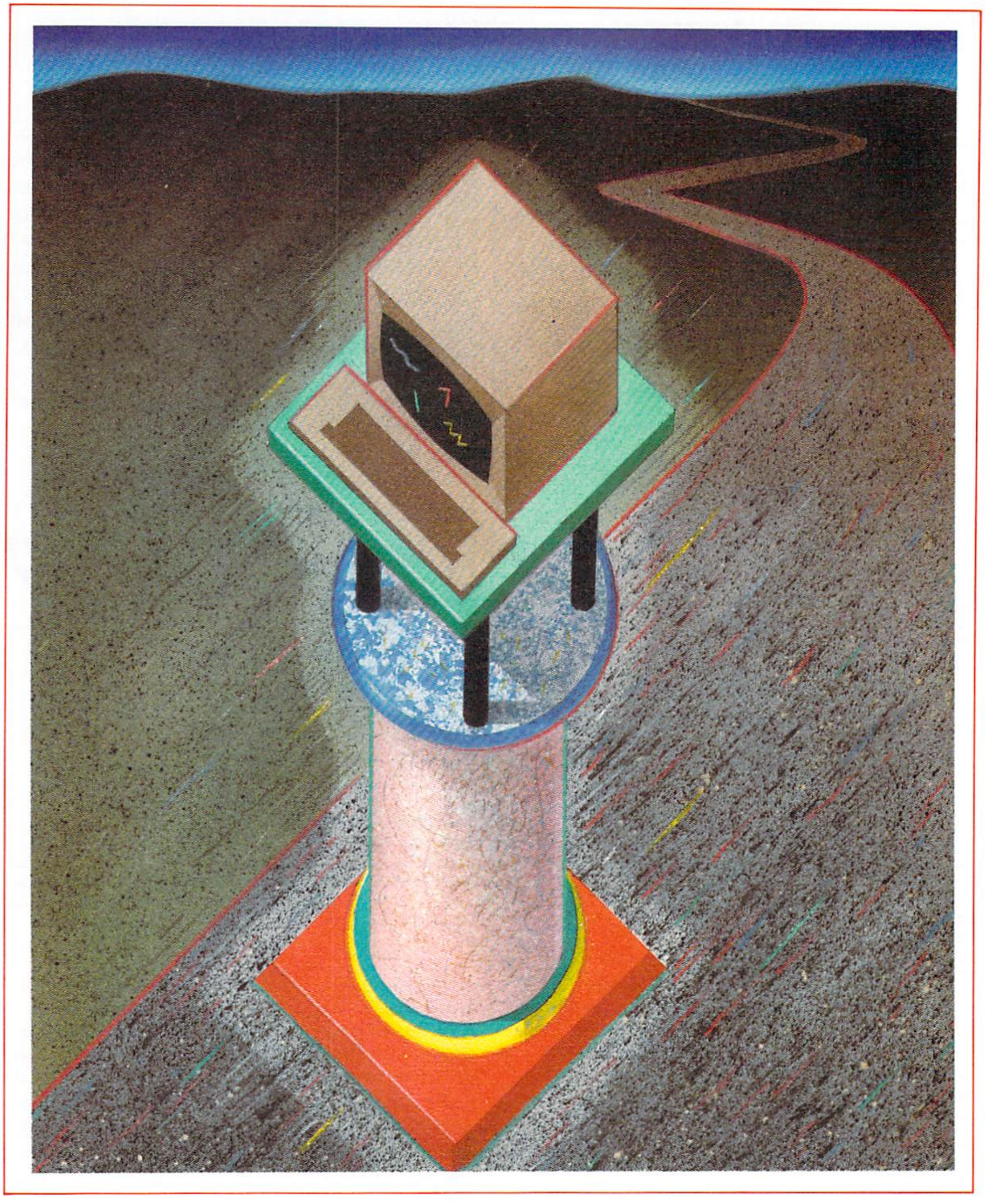


Illustration by Steven Lyons

The Personal Art Of a Personal Computer

By Scott Wright

Once upon a time there was no art. No art at all. Nobody walked around saying, "Hey, look at this great work of art on this cave wall." Nobody waited for the price to reach a million bucks for a work of art by the anonymous sculptor of the exquisite deer's head from the Key Marco culture. The people who built Stonehenge had no certificates from any school of architecture. And, of course, because there was no art, there were no artists.

Now don't misunderstand. There were beautiful objects, designs, buildings, paintings and sculptures in those ancient days, and those works were made by man, but the works were not considered art and those who made them were not known as artists.

◄ In certain primitive societies there is still no word for artist. Maybe that's why they're called primitive. Maybe that's why they still sit calmly hacking logs into magic totems or decorating the sails of their ships to guarantee returning to their families. Their art is real, it's just not known as art.

But somewhere along the path of history, the world of the man-made began to be divided, and the works of man that dealt with magic and symbols and decoration were assigned to separate categories. Works of high culture were set apart and attributed to the "artists," while the rest—works of ordinary life and practical usage—remained with the masses.

This notion spread with civilization, and the gap between the work of artists and the work of ordinary men grew wider. Art schools were developed, and even unions (guilds) to assure that no intruders got into the sacred halls of art without credentials. Artists became magicians, instead of what had been, originally, the other way around.

But as the world of art and artists became more tightly organized, the great works of ordinary man went underground. Or overground, as in the case of cities. For, while individual architects were designing individual buildings to be admired by individual art critics, the cities in which those building were being built were growing into some of the greatest works of art of man. It's just that nobody can see them as such without the label "art." (And as partial proof of this, note that the astronauts reported that the only work of man that can be seen from outer space is the Great Wall of China. Now that's nonsense. If you can see a wall that's only a few yards wide, surely you can see Miami. Or Tokyo. Or Shanghai, which is the most populated city in the world. But nobody—astronauts included—ever thinks of cities as great works of art.)

Much of man's unrecognized art went big, like 4th of July parades, steam locomotives, fire engines and movies (until the intellectuals caught up with them, the art had to slip out the side door of the movie house and sneak into the TV studio, where it found a home in commercials) and the rest went small.

Small, as in personal. Personal art.

For the People, By the People

Personal art has always been the property of ordinary people, but even that has suffered from the tyranny of how we think of art. Believe it or not, in some societies it even reached the point where people were afraid to send a home-made birthday card to someone in the family, or buy and place the furniture in their own homes. You may have heard of such a culture—it's our own.

Our greeting cards are created by artists. Our homes are decorated by them. Our clothes are designed by them, and the designers' names are now considered so superior to ours that we wear them openly displayed across our chests and rumps. So rigidly are our pictorial images shaped by artists that for a while we painted by numbers to fill in their works. We don't do that much anymore. Instead, we buy full kits for crafts, which tell us every step to take to make a Christmas decoration. Or a pillow cover. Or whatever.

Most of us don't have an artist's union card, which would let us freely take a brush or pen or pencil, clay or wax or plasticine, cloth or thread or colored yarn, just about anything, and use it to express ourselves. Why don't we? Because we know that art's too hard. We know that art's for artists. Art takes talent. "I've got a nephew who had real talent. Went to art school. Tried teaching for awhile, but now he's selling. Something to do with computers, I think. Makes good money. Don't think he paints much anymore. Had a real talent for it. Doesn't run in the family, though. I could never draw a straight line with a ruler, know what I mean?"

No.

Talent doesn't come in straight lines. In fact, nobody knows what talent is, other than a intense and focused interest in whatever art form is available. Talking about a lack of talent is simply an excuse for not trying, which means that it is not too late to take back what is ours—our "personal art," created as a part of living, not according to some school or trend or theory of aesthetics.

This special kind of personal art has its own history. It's the sampler on the wall done by great grandmother some 80 years ago. Not the first try—that usually followed the traditional old patterns—but the ones done later, the ones that she designed herself. Or her quilts. Or her needlepointed chair seats. Or decorations throughout her house. A myriad of touchings through a lifetime.

The image of Beatrix Potter decorating her letters with tiny watercolor paintings seems dated, like something from a lost past—a small rabbit in a small garden behind a quiet cottage in England, unrelated to our contemporary world. But designing one's own stationery is quite possible, including keeping the decorations up-to-date. It doesn't take much to make this world more personal.

Art and art

OK. So what's all this got to do with computers? Specifically, what's it got to do with the Amiga?

Well, nothing. Or a little. Or a lot. It all depends on who and what you are, and how and why you use your new Amiga. If you are a businessman who wants a computer just for spreadsheets and the like, you probably have not even read this far. If you are a programmer who wants to design new spreadsheets, likewise. If playing games is all you bought the Amiga for, you're busy right now aiming your guns at the alien invaders in their super-hyperstarships, or jumping your little animated plumber from the first floor to the second before the plaster falls off the roof and mashes him flat.

But, if you are more than a single-focus user of Amiga, if you make time for fooling around with the computer every now and then, if you're curious and wonder what this thing might do, if you're willing to go beyond the manual and experiment with the machine, including linking it to others such as a VCR, you might, ►

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just *might* be interested in the fact that you have access to a way into the world of art.

Not "Art"! Not Art with a capital "A". I mean "art" with a small "a"—no frills, unglorified, inconsequential—THAT art.

Now, the Amiga isn't going to build cities, create parades or build locomotives or fire engines. Nor is it quite up to creating television commercials for the networks (although it is quite possible to use the Amiga for less expensive, less technically sophisticated TV commercials on the local level). But the Amiga may be the ultimate personal computer.

The key word here is "personal." The Amiga computer gives you access to the world of personal art. Not the work of an artist, not the work of a painter or sculptor or printmaker who struggles with his vision and his medium, conquers it, then has his work interred in the mausoleum of an art museum. It is rather the personal art that is born in and gets its life force from the personal world of the ordinary person and is then reflected back into his world, to reveal what was and to affect what will be.

What about a birthday card made, not with clumsy crayons, but with Amiga graphics? Not designed by someone else, but something that the child built step by step. What about a card that's custom made for Grandmother? What about Christmas cards designed by the whole family and printed in full color right at home? Or is Hallmark somehow better at love than we are?

George Eastman invented one of the greatest of all personal art media when he came up with the Kodak camera and its snapshots to record the family's time. Most recently, the video recorder has held the greatest promise of becoming the art medium of ordinary people, but it hasn't really caught on yet. Maybe it will.

Now the Amiga is here, with its remarkable graphics capabilities and its unique capacity to superimpose computer graphics over video images. It is distictly possible that Amiga will replace many of the media used in the past and present for personal art before it's through. Maybe that's the most important point: Amiga may be the appropriate medium for personal art in the Electronic Age.

But all this does seem far from the image of Beatrix Potter with her gentle watercolors, or a child holding a crayon tight, with tongue sticking out of one corner of the mouth, working on a birthday card for Grandma. Where is the humanity in a computer's keyboard, monitor and printer?

The humanity is in the mind of the person using it. The computer, regardless of its miraculous technology, is just another medium, just another tool. But it should be remembered that there is no more humanity in ground pigment mixed with gum arabic to make Miss Potter's watercolors than there is in a plastic keyboard, glass picture tube and metal printer. The medium has never held the human element. Rocks are rocks and wood is wood, and people make them tell of fear or dreams or loving.

Miss Potter's tiny paintings of Peter Rabbit were to illustrate her letters to her niece and nephew. It is not suggested that we can all write so well, but the stationery that we write on could be designed to reflect something of who we are. Such designing can be done by professional artists, at high cost both in money and in feeling. Or stationery could be designed and printed on the Amiga, one sheet at a time—carefully, beautifully and personally.

If one considers the child and the birthday card, the images of working with a crayon or working on an Amiga keyboard are not really in conflict. In fact, the keyboard may be closer to the child's world now, a place where he or she feels comfortable. Our children are learning how to survive in the 21st century, and crayons may not be much help.

The greatest danger lies in some clown's coming out with a program called "Greeting Card For All Occasions" for only $39.95. This will convince half of our generation that we were right when we passed on the job of telling someone else we loved them.

Until then, there is still hope, and good things will be done.

In the past, personal art has included fabric designs and designs with fabric. People dyed their own materials, chose color, texture and even patterns, if they knew the tricks. Some of this is still alive in work like quilting, needlepoint and embroidery. But again, unfortunately, most of the designing has been turned over to the artists, and their work is now in kits for anyone to buy.

The kits aren't needed. The designs for these fine crafts can all be done on an Amiga—yes—and even though these crafts have come down through the centuries, they are here now, and they will gain new life if they are integrated into this age. They should not be recreations of the past, but creations of the present for the future.

Computer-Designed Quilts?

"Computer-designed" sounds wonderfully technological, and it may help to sell cars or stereos. But "computer-designed" sounds crazy for a quilt or needlepoint. But it isn't. Computer-designed means simply that the design for the piece was done on a computer using a graphics program to make designing faster. The conception is the designer's, not the machine's. The trials and errors belong to the human, not the microchips. The beauty and the meaning belong to the person, not the machine.

Virtually any pattern can be created and printed with the Amiga. As Amiga graphics can be repeated very simply to form complex designs, it makes such things relatively easy. The printout can contain the notes for colors or stitchery that may be needed later. Further, the ability to store the design, then go back and change any part that needs it without having to do the whole thing over again encourages experimenting and allows for painless altering and correcting.

These are techniques available in our world, techniques that great grandmother would have given her false teeth for, and they should be used.

◄ Birthday cards, stationery, even fabric and stitchery designs are typical of the personal art of the past that can be brought up to the present by the Amiga. An extended list of similar creative activities might include designing holiday decorations, gardens, interiors and even exteriors—the possibility that various colors could be tested on a stop-frame image of your house *before* you invest in the paint is really quite exciting, and quite possible using the Amiga, a VCR and Amiga's 4,096 colors. (Who's job was it to count them?) And the design of displays for collections of stamps or coins or whatever tends to get collected in your house. And the creation of a model railroad layout, and...

And that's enough. The idea of using an Amiga with a graphics program to create the designs for almost anything that needs designing is not difficult to understand. What's difficult is to stop thinking of the computer as just a calculator, word processor and a filing system and accept the idea that the Amiga can come out of the office and into the life of the family in ways we haven't thought of before.

Taking It Personally

For all this to happen, two things must occur. The first is that the ordinary person must start thinking of the computer as a normal part of his or her existence, not just something to be used for "serious" business, or a machine for kids to play games on.

When cameras were massive boxes using glass plates and stinking chemicals, few ordinary people used them. When George Eastman came along with his small, simple-clicking, no-chemicals-needed box camera, the people of the world became photographers. A similar situation is happening with computers.

Most people in our society don't own a personal computer, and many of those who do have not integrated it into their lives in the same way as their cameras, TV sets and microwave ovens. When they finally do, they will find that the computer's graphics capability can become a part of the way they solve their everyday design problems.

The second thing that must happen may well be even more important. People must put aside the perception that art is something just for "artists," something the average person has no business messing with. They must discover that there is a whole universe of personal art, available to virtually everyone—a world of art where they can express *their* ideas, *their* visions and *their* feelings.

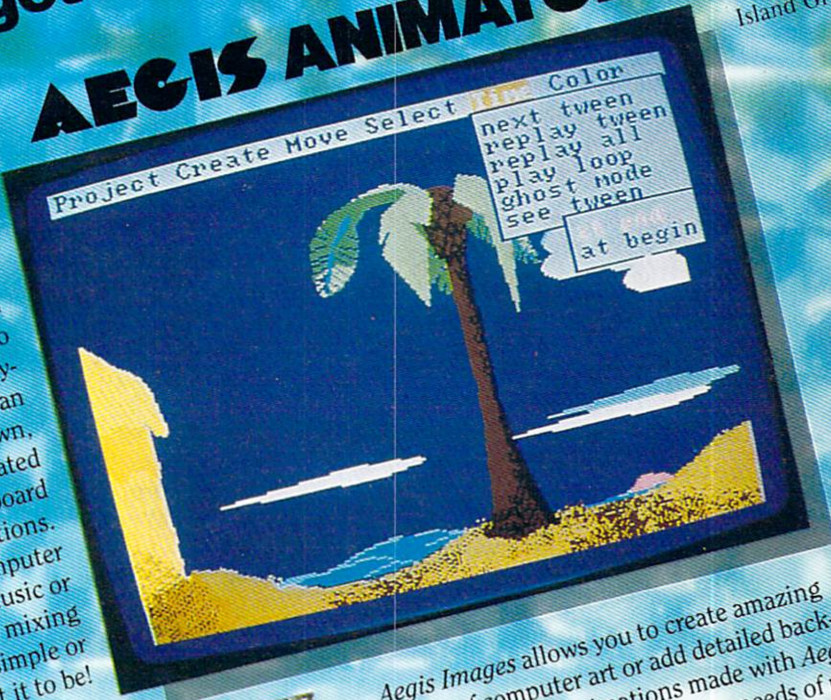
The Amiga will not change the average person's world all by itself, but, with its incredible potential for graphic design and visual expression, the Amiga certainly points the way to the future of personal art. With the help of the Amiga, the word "personal" in "personal computer" is growing bigger and more meaningful every day.■

Address all author correspondence to Scott Wright, 54 Vly Road, Albany, NY 12205.

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Hors d'oeuvres

Unique applications, tips and stuff

You may be using your Amiga at work, you may be using it at home, or you may be using it in the back seat of your car, but in some way or other, you are going to be using your Amiga in a slightly different way than anyone else. You are going to be running across little things that will help you to do something faster or easier or more elegantly.

AmigaWorld would like to share those shortcuts, ideas, unique applications, programming tips, things to avoid, things to try, etc., with everyone, and we'll reward you for your efforts with a colorful, appetizing, official *AmigaWorld* T-shirt. (Just remember to tell us your size.)

Send it in, no matter how outrageous, clever, obvious, humorous, subtle, stupid, awesome or bizarre. We will read anything, but we won't return it, so keep a copy for yourself. In cases of duplication, T-shirts are awarded on a first come, first serve basis.

So, put on your thinking berets and rush those suggestions to:

Hors d'oeuvres
***AmigaWorld* editorial**
80 Pine St.
Peterborough, NH 03458

[redacted]

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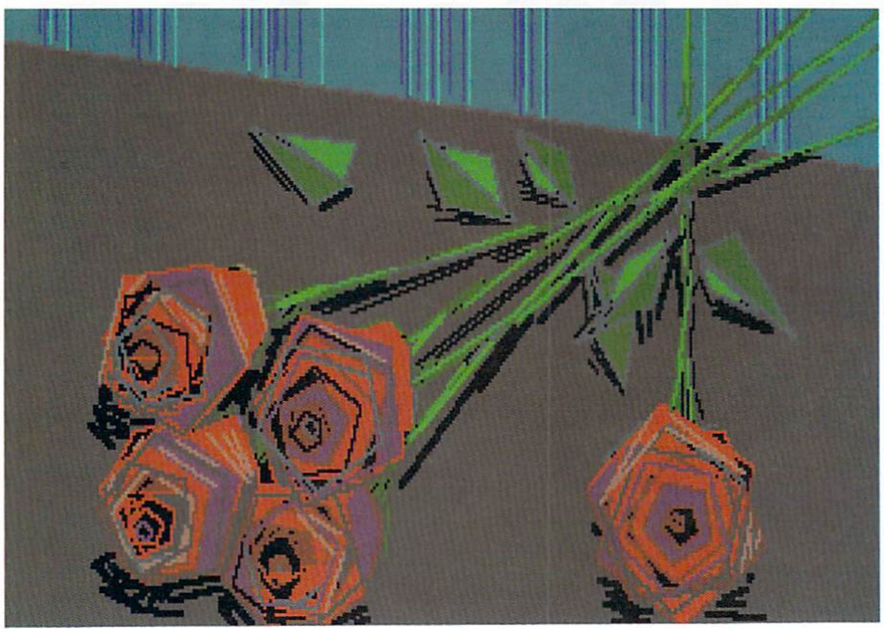
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Digital Canvas

Digital Canvas is designed to be a showplace for Amiga artists. This issue features the work of free-lance artist Roger Goode.



Oil Painting, "Landscape"



Roger hails from Port Washington, New York. He studied at the Stevenson Academy of Traditional Painting in Sea Cliff, New York from 1973–75 and at the Art Students League of New York from 1977–79. His work has been exhibited with the Allied Artists of America, the Knickerbocker Artists Association and others. He has received several awards, prizes and scholarships for his work.

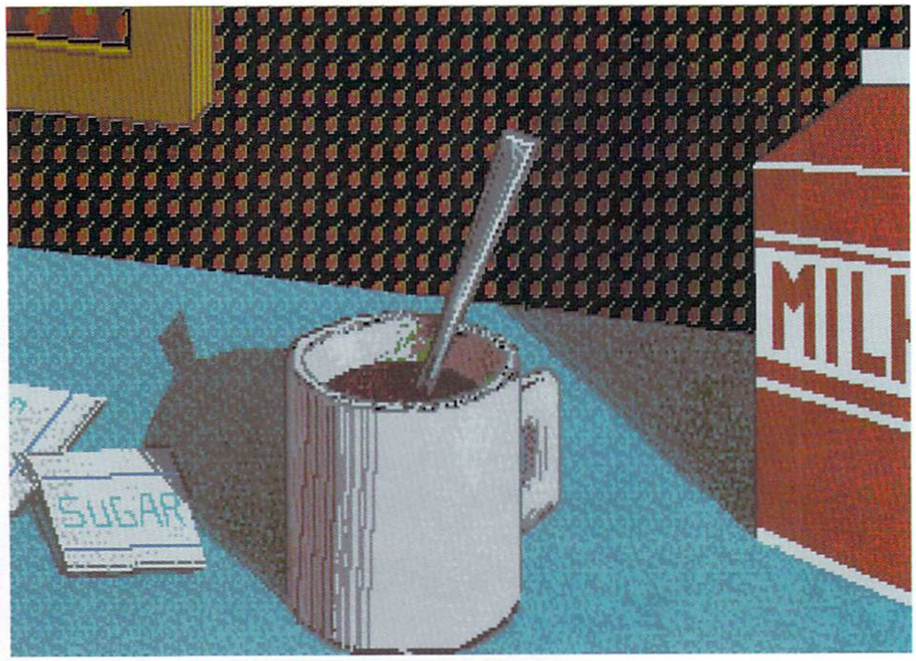
Over the years, Roger has done pen-and-ink drawing and both realistic and impressionistic oil painting. In the past few months, he has been doing free-lance illustrating for magazines.

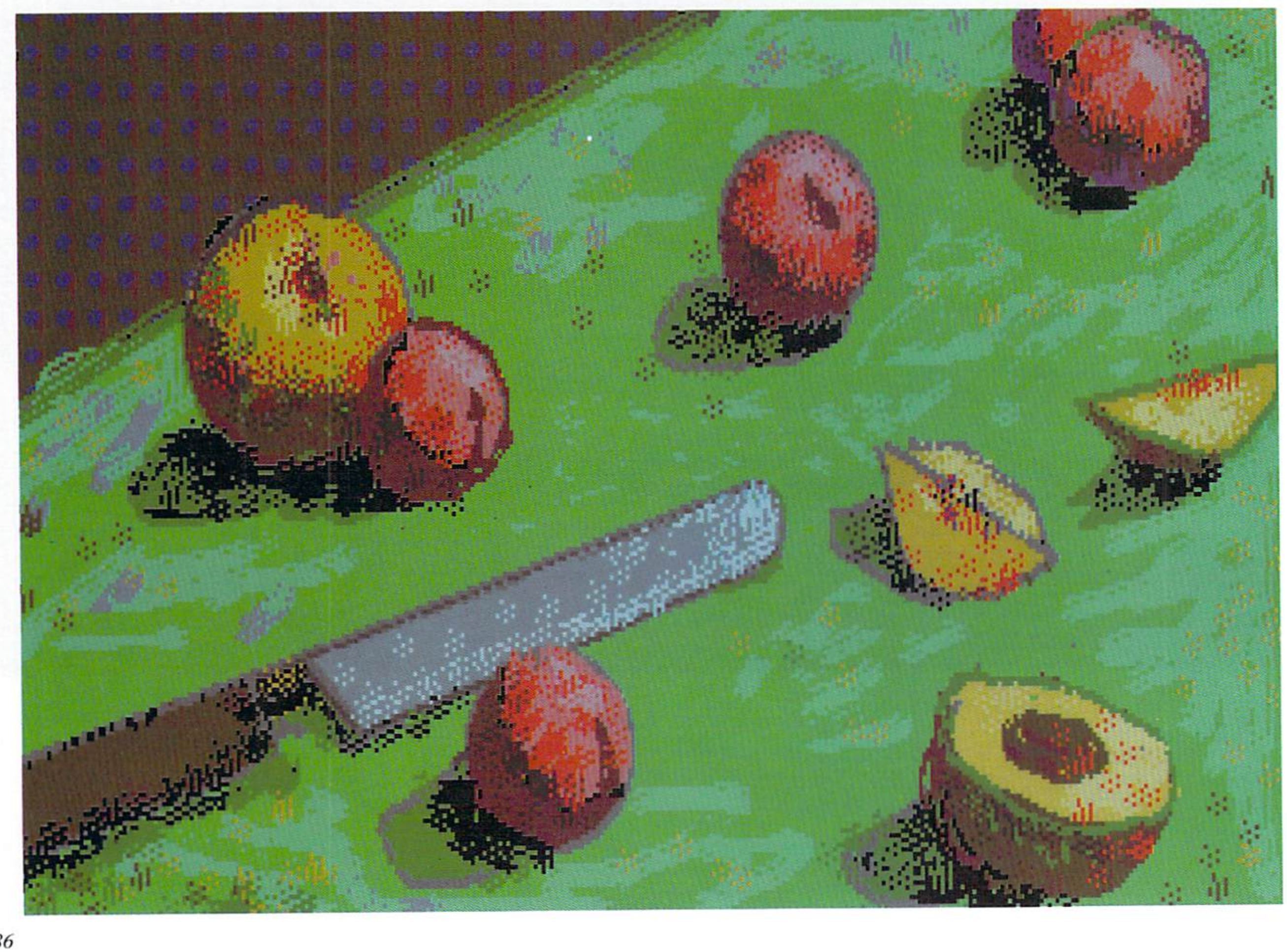
Roger was just recently introduced to the Amiga, and he spent two weeks experimenting with its graphics capabilities, using it to imitate traditional art forms and to create unique, computer-generated effects. Prior to this, he had no experience with computer graphics. The work displayed here is the result of that experimentation.

Roger is thinking of using the Amiga in his free-lance work. He feels that the Amiga lends itself to doing illustrations, since it gives the artist flexibility and allows him to experiment with palettes, brushes and patterns.

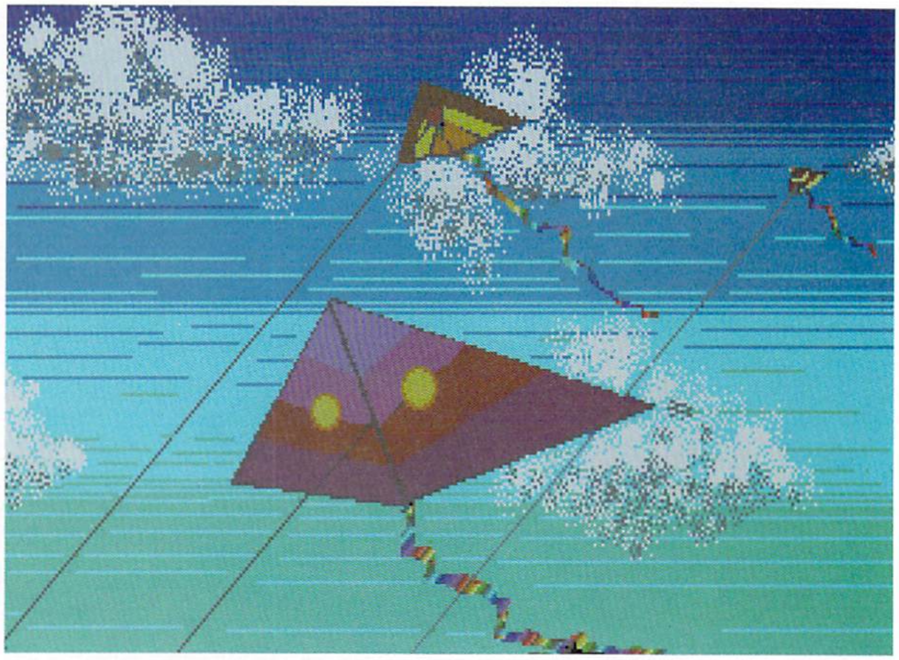
"The Amiga has opened new possibilities for me as an artist," says Roger. "When I first thought about computers and art, with all the hype about it being the wave of the future, I was disdainful about the whole idea. But after seeing the Amiga, I realize that it's another legitimate medium for an artist." ■

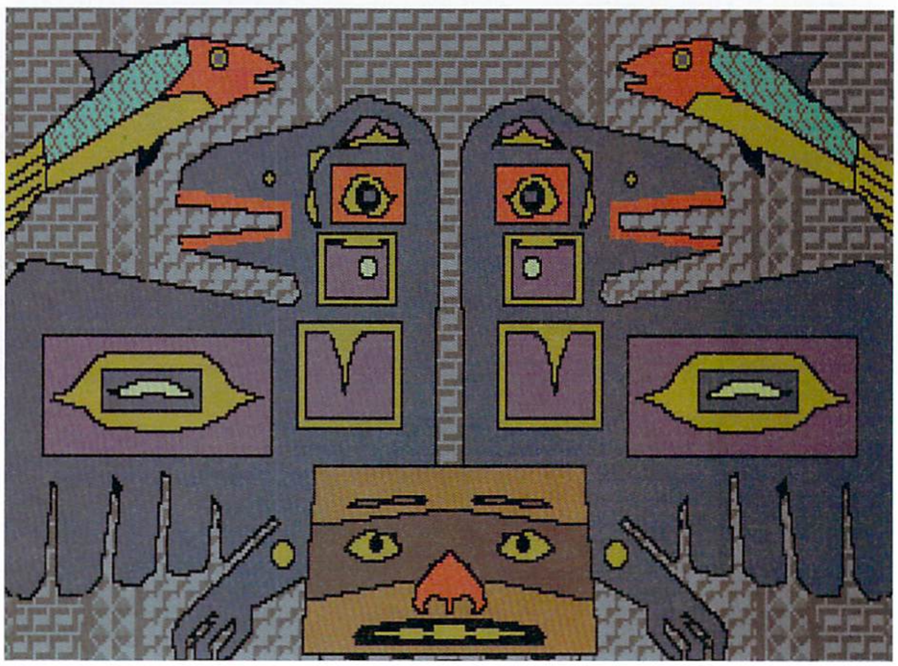


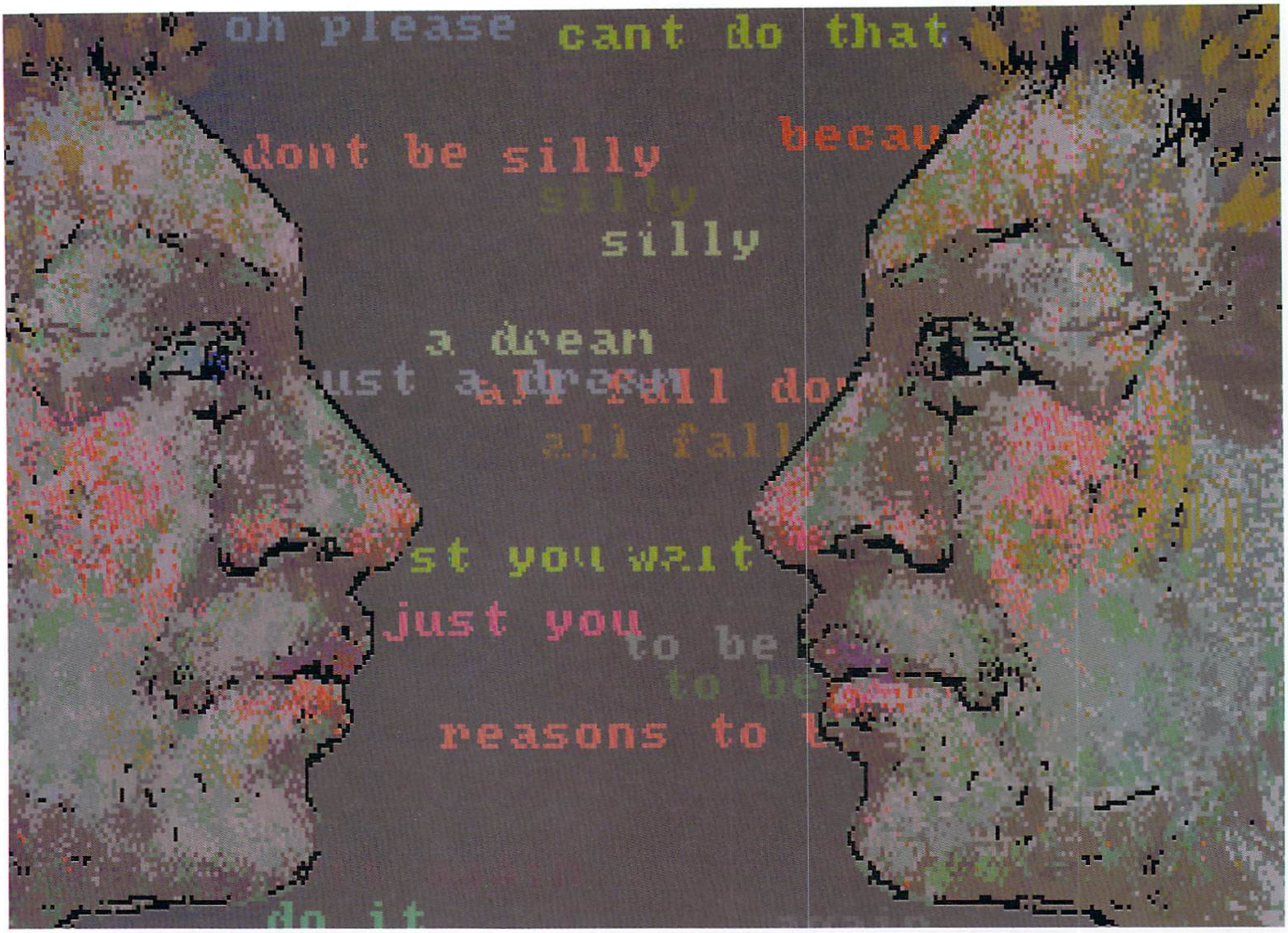

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oh please
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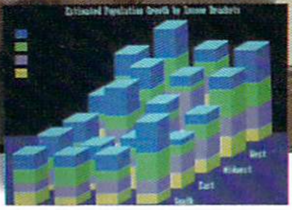





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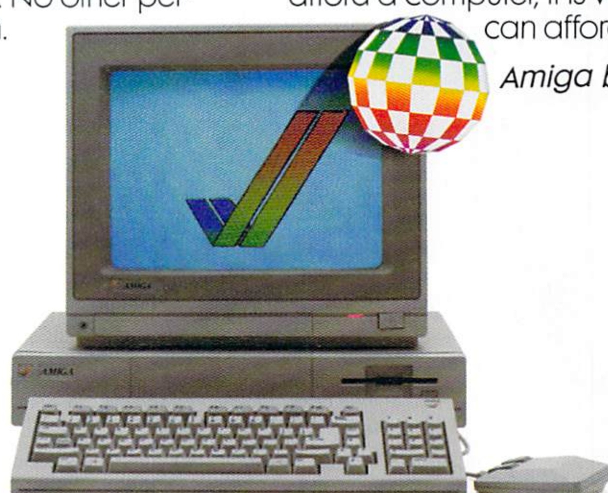
Amiga will talk to you, read back what you write, answer your phone and compose music like a professional synthesizer. It can add new creativity to your life and bring new life to everything you create.

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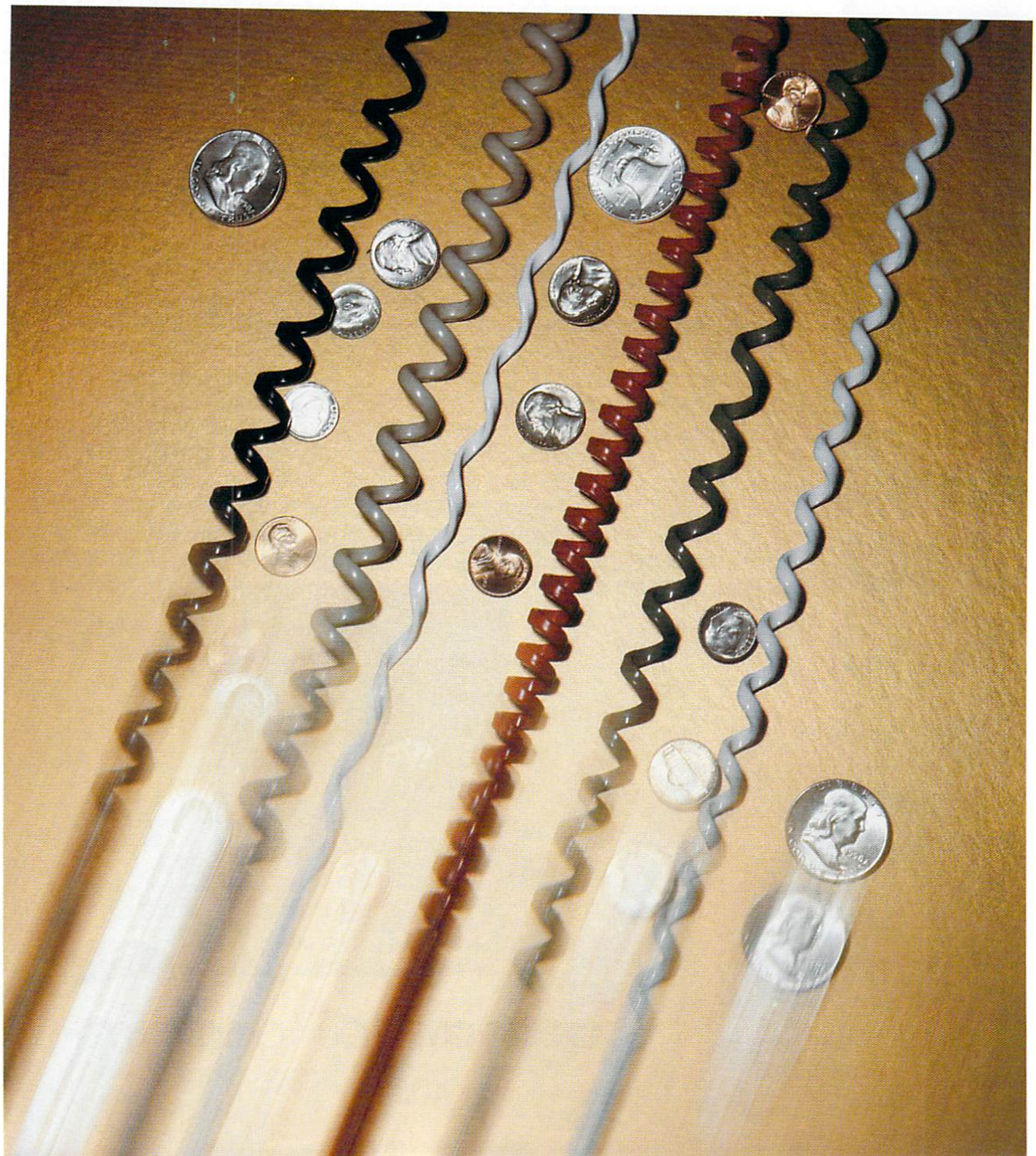


Amiga makes telecommunications fast, easy and colorful.



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Protocol



Telecommunicating in the Small-Business World

By Margaret Morabito

The business and professional world is on-line around the clock and around the world. Small businesses can now afford to participate in computerized telecommunications activity, whereas just a few years ago the cost of computer and modem equipment would have been prohibitive. With an office computer such as the Amiga, your business will not only be able to compete with larger, wealthier, computerized businesses, but you will actually be in the forefront of business telecommunications technology and will be able to participate in all of the new telecommunications activities now being developed.

The Amiga's multitasking, fast processor speed, graphics and speech synthesis will work together to produce telecommunications activities which have not yet been available to the office environment. These will include video image transfer, synchronized audio-video transfers and high-resolution business graphics transfer, all accomplished while running other computer applications.

This article will introduce you to the traditional ways in which telecommunications activities have been helping businesses and the professions. The on-line networks summarized here are providing opportunities in three broad areas for increased productivity in the office.

Information gathering, communications and transactional activities are the three areas into which all telecommunications activities fall. Each area is tapped with the same equipment: a personal computer and a modem; however, each provides a different focus. The underlying goal in all cases is to promote a faster, more efficient exchange of information which results in increased productivity and increased profit.

Information

Information gathering is important to most professions and businesses. With today's fast pace and "smaller" world, this job becomes harder without electronic communications equipment like a computer. Across the nation and across the world, business trends, political news events and even the weather are areas which can affect business decisions on a daily basis.

Professions, such as law and other research fields, require daily access to huge amounts of information. Much of this information is archived and unchanging; however, there is so much information that a logical and quick search process is necessary. Most professionals don't have the time to spend days in libraries locating case histories, rulings and other information. Using the personal computer to access existing on-line information services is a logical and necessary requirement for the speed, comprehensiveness and accuracy required in serious research.

Communications

Communications is the second area which is at the heart of most business activity. Let's face it, the mail services we have to work with are often too slow and too unreliable. Proposals, information transfer and discussions are all wound into the process of running an active business. Immediacy becomes important when the work flow of a business depends upon decision makers having the facts in hand.

If you have to wait four to five days for a proposal to come in, or even wait overnight, the delay could prove unworkable when deadlines have to be met, or when a competitor is sitting on instant information exchange via computer.

Electronic mail and teleconferencing are two major business communications activities. Business reports, proposals, memos, business graphics, letters, articles and updates can be sent and received with a computer and modem. You can even reserve a private workspace on a network where you can store important information, names, addresses and phone numbers for use at the press of a key.

Your personal computer allows fast transfer of information, and not only to others who have computers (although this is ideal). You can also send batch mailings and individual correspondence to anyone in the world whether or not they have a computer. You can ►

hotograph by Edward Judice

choose from four-hour to overnight delivery, depending on your needs. Your electronic mail service will send your communication electronically to a city close to your destination, print out a hardcopy and then have a courier hand deliver the paper mail to the recipient.

Teleconferencing becomes important when your business has branches in different locations across the continent. The business trip has been the mainstay of business communication; however, transportation of personnel is not necessary in many cases. Your ideas are most important, and ideas can be quite easily shared in a group setting over the on-line networks.

The business trip has been the mainstay of business communication; however, your ideas can now be shared in a group setting over the on-line networks.

With the new audio-video transfer abilities now being developed for the Amiga, a group will actually be able to be *seen* and *heard* via computer, with no one having to leave their offices.

Transactional Services

The third major telecommunications activity involves transactional services. These activities traditionally involve the exchange of products, services and money. No longer is it necessary to buy a plane ticket in person. You can log onto one of several networks, check out the flight schedules and rates, and make the reservation while on-line. This applies as well to hotel reservations, automobile rental and other services traditionally tied in with business travel.

Banking is becoming more prevalent on-line. Your business could set up its accounts on a videotex network and actually have all money transfers done via personal computer. Rather than physically handing over your monetary transactions at your bank, the shuffling of money can be done electronically. Bank statements are already generated by computer. The advantage to on-line banking is that you can see the state of your accounts anytime you want, and you can transfer funds anytime.

If you have a personal computer and manage a business, or are in a professional field, your computer can be much more productive if you use a modem. You will discover that certain aspects of your work load can be significantly reduced, freeing your time for other important tasks.

Network Sampler

What follows is a summary of ten on-line networks which are likely to appeal to business and professional users. These are just a sampling of the networks and topics available within each network and are provided to help introduce you to the wide variety of business services available on-line.

CompuServe's Executive Information Service
5000 Arlington Centre Blvd.
Columbus, OH 43220
(800) 848-8199

CompuServe is one of the most well-known on-line information networks among all types of telecommunicators. Many valuable business services are available on CompuServe through its Executive Information Service (EIS). EIS provides a combination of communications opportunities, business information and transactional services. EIS lets you send and receive electronic messages to and from your business contacts who also use EIS.

Through an electronic conferencing section your business can set up an on-line conference with participants from across the continent. Additionally, professional forums are continually being offered. These forums are headed by experts in a chosen field and are a valuable method for exchanging the latest information on topics affecting your business.

In addition to communications, EIS offers a large amount of news and information. News from the Associated Press is available. You can take advantage of the EIS news clipping service, which will collect articles from around the world on your chosen topic and store them in your private electronic file area. (*The Washington Post* provides an electronic newsletter on CompuServe.)

Additionally, a large amount of investment information can be found on CompuServe. Standard and Poor's, Value Line, Disclosure II and Money Market Services are some of the offerings.

Transactional services include travel services for air and ground travel. You can gather information on-line and then make reservations.

Dow Jones News/Retrieval
Dow Jones and Company, Inc.
PO Box 300
Princeton, NJ 08540
(800) 257-5144

The Dow Jones News/Retrieval (DJN/R) is primarily known for its business and financial information. Five large areas exist within DJN/R. First, you can get comprehensive and fast access to *The Wall Street Journal*, Barron's and the Dow Jones News Service. You can browse through *The Wall Street Journal* by reading highlights, headlines, the front and back page features, market pages and editorial columns. A review of the week's

Creativity



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economic events is also available.

The Dow Jones Text-Search Services let you read the complete stories that have been in *The Wall Street Journal* since January 1984.

For communications, DJN/R offers free access to MCI Mail *(details later in this article)*. You can send electronic and hard copy mail worldwide.

Stock and investment information abound on DJN/R. Dow Jones quotes, company earnings forecasts and detailed information of U.S. and international companies is available.

In addition, the Official Airline Guide lets you gather flight information on-line.

The Source
1616 Anderson Road
McLean, VA 22102
(800) 336-3366

The Source offers businesses a wide variety of services. You can get recent news stories and continual updates on business news. United Press International, the Associated Press, *The Washington Post*, Scripps-Howard News Service and Financial Market Reports are among the news offerings.

Business and investing services include STC/SSI Investor services, investment data and analysis, financial market reports and news, financial services index and a business bulletin board.

Communications services are also available on The Source. SourceMail lets you send and receive business correspondence to other subscribers. Conferencing is available. For further correspondence, it's possible to send Mailgram messages on this network.

Transactional services include air scheduling, hotel and restaurant information and travel agency services.

Delphi
General Videotex Corporation
3 Blackstone Street
Cambridge, MA 02139
(800) 544-4005

Delphi is a large on-line network which provides a good deal of business related information and service. Delphi provides electronic mail services for subscribers, but it also lets you send mail to non-computerists by Western Union Telex. Furthermore, through Delphi you can gain access to DIALOG, one of the most sophisticated collections of on-line databases.

Airline scheduling and reservations, appointment and scheduling facilities, on-line conferencing, Commerce Business Daily on-line, a 20,000-entry encyclopedia, mailthrough to other information networks such as CompuServe, newsletters, securities transactions and prices, travel services, typesetting, wire service news and word processing are some of the varied services available through Delphi.

BRS Information Technologies
6 So. Bryn Mawr Ave.
Suite 200
Bryn Mawr, PA 19010

BRS offers many bibliographic services and is aimed primarily at public libraries, universities, colleges, specific business and professional users. If you need information, BRS is the service to look into. You can search for topics of need on a wide variety of subjects in the following areas: science and medicine, business and finance, reference, education, social science and humanities, and energy and environment.

These are broad categories, each containing many subtopics. You will also be able to search professional journals, abstracts, indexes and a full gamut of reference materials that you would otherwise have to locate in a large reference library.

DIALOG Information Services, Inc.
3460 Hillview Ave.
Palo Alto, CA 94304
(800) 227-1927

DIALOG is also aimed at large information users: libraries, colleges, professional services and businesses. Most of the databases in DIALOG are bibliographic. Subjects include agriculture and nutrition, chemistry, medicine and bioscience, energy and environment, science and technology, materials science, patents, business and economics, law and government, current affairs, social sciences and humanities, education, foundations and grants.

Also included are directories such as the Electronic Yellow Pages and Books in Print.

NewsNet
954 Haverford Road
Bryn Mawr, PA 19010
(800) 345-1301

NewsNet provides business news and information through on-line newsletters. A wide variety of newsletters in a full range of subject areas are produced in electronic editions. These newsletters are updated on a regular basis.

Newsletters can be read in full, or they can be scanned by headline. NewsNet has a versatile search feature that will match your input words and phrases with all the newsletters in their databases.

NewsNet's subjects include advertising, marketing, automotive, construction, chemistry, communications, education, electronics, energy, entertainment, environment, farming, food, finance, accounting, business, government, insurance, investment, management, public relations, publishing, real estate, taxation, telecommunications and retailing, plus more.

LEXIS
Mead Data Central
PO Box 933
Dayton, OH 45401
(800) 543-6862

LEXIS is aimed at corporate libraries, public relations companies, commercial banks, brokerage firms and specifically, law firms. Lawyers use LEXIS as a source of information for ongoing legal research.

Productivity



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QuantumLink: Commodore's New Network

By Margaret Morabito

QuantumLink (QLink) is a new on-line network available for personal computerists. At first, its services and information will be aimed primarily at C-64 and C-128 owners. Next year, other computers will be serviced through QLink, including the Amiga. QLink will be one of the first on-line networks to provide Amiga-specific software and information targeted at Amiga owners.

QLink made its debut in October and has been developing toward completion since then. The entire concept behind QLink is different from most of the on-line networks available because this is the first network to be marketed and supported by a computer manufacturer for owners of its computers.

QLink is produced by Quantum Computer Services, in Vienna, Virginia. Being software-specific, QLink subscribers will need special terminal software for accessing this new network. The software is already available for the C-64 and C-128; Amiga software is under development now and will be available in the spring of 1986.

One strength behind QLink is its color graphics capabilities. The NAPLPS protocol for graphics transferal has been in use on videotext services such as PlayNet and Viewtron for several years. QLink will use this communications protocol to send out colorful graphics screens as well as text displays.

What Does QLink Offer?

QLink provides a forum for discussion about computers; it holds software and hardware reviews and the opportunity to download public domain programs into your computer.

Eight major areas exist within QLink: Commodore Software Showcase, Commodore Information Network, People Connection, Just For Fun, Shopping Center, Learning Center, News & Information and Customer Service.

In the Commodore Software Showcase, you can peruse a catalog of commercial programs. Currently over 2,600 programs are in this database. Also, you can actually preview commercial software before you buy it, through the Software Previews database.

In QLink's Software Exchange, you can upload and download public domain software. Furthermore, you can upload lengthy private messages and programs from a File Transfer section.

The Commodore Information Network, formerly on CompuServe, holds a wealth of information. The Commodore Computer Tutor will let you ask questions about your computer and receive answers on-line. You can view a weekly synopsis of the happenings on CIN in the Commodore Exchange Weekly. Also, you have access to a user group center, Commodore Helpline, and a public message board.

The People Connection is the social center of QLink. Telegaming and on-line chatting are the focus of this section. When software becomes available for the Amiga, you will be in for a treat. Games for the Amiga will be more interactive and detailed than those that have been available on networks like this for other computers, such as the C-64 and Apple II.

QLink is not providing information and services just for Commodore computerists. It is compiling a large general interest base that will in many respects resemble what you may have seen on CompuServe and Delphi.

For example, in the Just For Fun section, you will be able to access movie reviews, soap opera summaries, a Hollywood Hotline report, RockNet Music news, trivia quizzes and contests.

In QLink's Shopping Center, you will find Comp-U-Store, an electronic newsstand, a book store, a music store and a software store. You will also find a Learning Center that holds the American Academic Encyclopedia, plus the Electronic University Catalog.

For news and information, USA Today evening updates are available in addition to on-line discussion forums. These forums are not Commodore-specific, and will cover a wide variety of topics.

Finally, the Customer Service Center on QLink offers account and billing services, subscription information, pricing and new service information.

Costs

QLink software is being bundled with all of Commodore's new modems, so if you don't already have a modem, you won't pay anything to get going on this new network. You will also get one month of free access. If you already have a modem, you pay only $9.95 for the QLink terminal program.

Once you have your software, you pay a monthly fee of $9.95. This will give you access to most of the services. The first hour of access each month is included in the monthly fee. Some services will accrue an additional charge of 6 cents a minute; these value-added services will be clearly marked for you.

Future Plans

Along with QLink's commitment to producing Amiga software, it is also working on adding many new services. For example, national banking, investment services and financial planning services are being planned for the future.■

For more information on QuantumLink, contact:
Quantum Computer Services
8620 Westwood Center Drive
Vienna, VA 22180
(800) 833-9400 for on-line registration
(703) 448-8700 for voice information

Information is provided in full-text form. LEXIS includes a series of law libraries and also a full text patent database. The libraries include the topics of Federal law, laws of all of the fifty states, United Kingdom law and French law.

You can also gain access to DIALOG from within LEXIS.

Instant Yellow Pages
A Division of American Business Lists, Inc.
5639 So. 86th Circle
PO Box 27347
Omaha, NE 68127
(402) 331-7169

The Instant Yellow Page Service gives you business access to a database of over 6 million U.S. businesses. Over 300 different Yellow Page listings are available.

MCI Mail
Box 1001
1900 M St. NW
Washington, DC 20036
(800) MCI-2255

MCI Mail is one of a growing number of electronic mail services tailored to personal computer usage. Through MCI Mail, you can do more than communicate with other subscribers. You can send letters and reports to anyone, regardless of whether the receiving party has a computer or not.

MCI Mail has laser jet printers in major cities across the nation. Your correspondence can arrive in letter-quality print with your own letterhead printed and even your signature. You can set up a database that holds names and addresses of your customers. This personalized database makes your correspondence quick and easy.

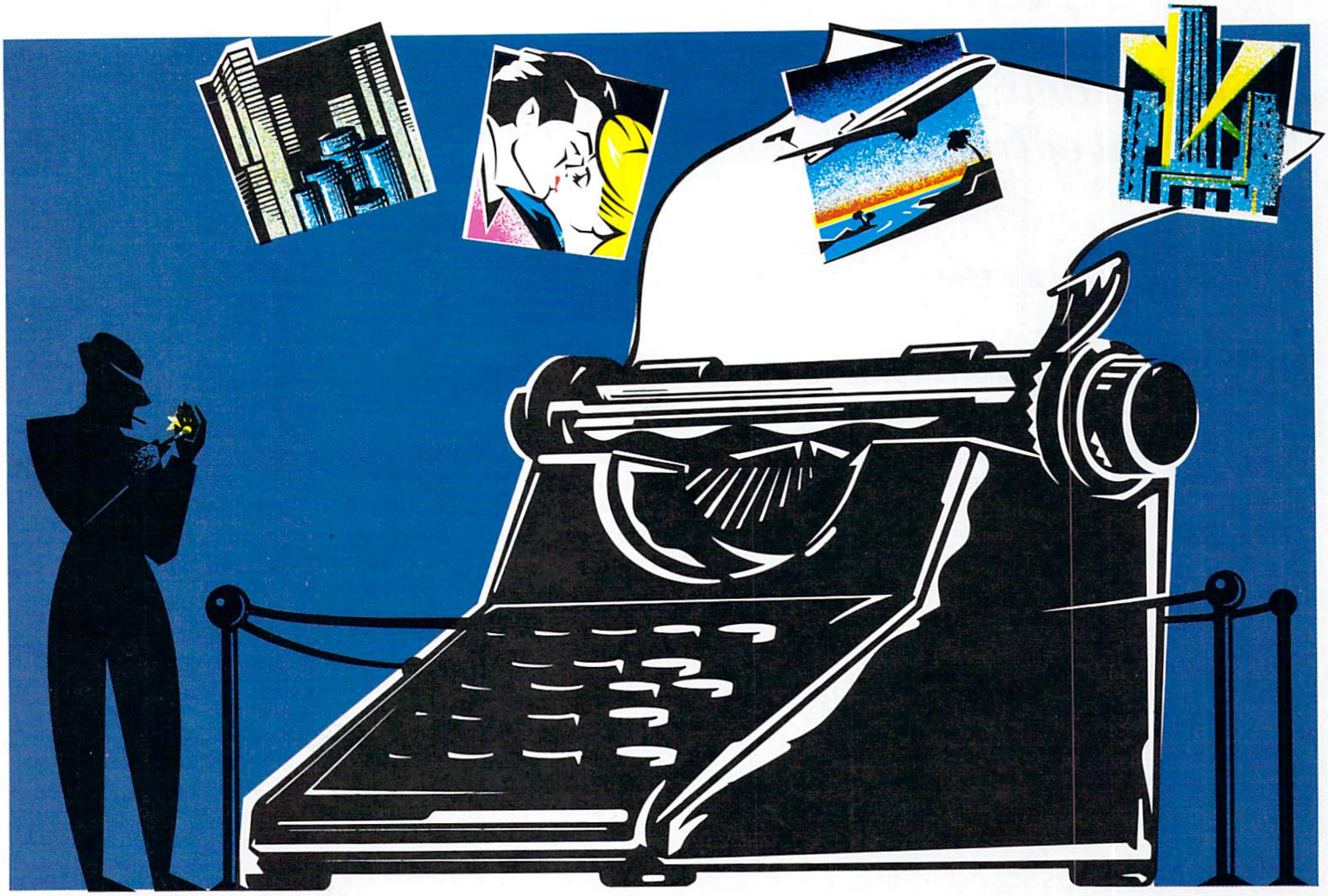
Like other electronic mail services currently available, you are not limited to continental correspondence. Worldwide Telex service is available as well as international courier delivery in over 80 countries.

The large information networks gather databases and services from a wide range of sources. Often, you will find that the particular database or service that your business needs is available on several large networks. You should check into the offerings of these large networks and decide which ones fill most of your business needs. Then you will be better equipped to make a decision as to which networks you wish to join.

For a detailed listing of commercial databases available—topics, descriptions and networks from which you can access these databases—consult *The Computer Data and Database Source Book*, by Matthew Lesko, published by Avon Books. Another source for help is the *Information Sources: Annual Directory*, edited by Henderson, Rosenau and Googins, published by The Information Industry Association.■

Address all author correspondence to Margaret Morabito, c/o AmigaWorld *editorial, 80 Pine St., Peterborough, NH 03458.*

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Here's the deal. You write an article and we buy it. Simple enough? And you thought that it was going to be tough to become a world-famous author. Oh sure, there are a few details that have to be taken care of first, but they are minor, almost trivial things that we can just skim over.

Typewritten. (You can steal a typewriter or word processor for a few hours, can't you?)

Double spaced. (What could be easier?)

Clean paper. (Who would send us an article on unclean paper? Surely not you!)

Send it to:

AmigaWorld
Submissions
80 Pine St.
Peterborough, NH 03458

Self-addressed stamped envelope. (If you can't manage this one, then you don't deserve to have your manuscript returned.)

Cover letter with name, address, phone number, social security number and description of the article. (You can wing it if you aren't sure.)

And that is it.

Pop it in the mail, put your feet up and wait those six to eight weeks. From there on in it's all gravy. Tons of money. Thousands of fans and admirers writing you letters, asking for autographs and locks of your hair. Guest appearances on network talk shows. Sandwiches named after you. Personal managers. Book and movie contracts. Accountants. Product endorsements. Commemorative stamps with your picture on them. Tax shelters. Hot tubs and polo ponies. Jetting to the islands. Nuisance suits. Ribbon cuttings. Contract negotiations. Tax audits. Hours and hours of travel, eating out of vending machines. Riot control. Libel suits against muckraking scandal sheets. Paparazzi invading your privacy. Expensive security systems. Bodyguards. Union dues.

Yep. That's all there is to it. So, write us a great article about the Amiga computer and, in no time at all, we will have your name up in lights. But, if you are the least bit hesitant, then send for a copy of our author's guidelines before you start enjoying. . .the good life.

Adventurous Journey

A Guided Tour Through The World of Interactive Fiction

By Bob Liddil

Adventure. The very word conjures up visions of battling swordsmen and night creatures swooping low over warriors crouching around a campfire. Exotic lands and exciting times entice green youth as well as traveled men of the world. The key to treasure and conquest is struggle, against the odds, against defenders and against the nearly impossible puzzles and traps in the path of those who would rise above themselves.

Adventure is a chronology of all these elements in the time flow of life. It pits the imagination of the author against the raw intellect of the player. An apt nickname given to the computer adventure in its infancy was "comp-u-novel," an appropriate description for a unique style of interactive fiction that weaves a story from beginning to end while including the player at the keyboard in its scenario.

To understand how to play an adventure on a computer, one must know a little about the framework created by the author. A well-balanced adventure has six things that hold it together: a goal, puzzles, clues or puzzle parts, barriers and traps, diversions and rewards. Let's dissect an adventure and see what makes it tick.

The Challenge

Our adventure is called *Fear of the Beast* and is written in a fantasy "swords-and-sorcery" style. Though an adventure can be in any genre or on any theme, this is by far the most popular. The first thing we do is to read every scrap of documentation provided with the program. Often this includes a detailed description, in story form, of the world of the adventure and is most likely chock full of clues that can make the difference between success and failure.

In the folder that comes with our game is a legend delivered by an ancient bard, which hints strongly that the Beast is an otherworldly creature who descended from the skies on a ball of flame to the castle he now occupies. Our job is to take control of his castle and kill him, to save the world over which he reigns with ruthless and bloody absolute power. There is some mention of Alabastrian flight soldiers, so we must be on the lookout for armed resistance. The ball of flame suggests space technology of a sort, so it is possible that the trap/barrier level will be particularly deadly.

The *goal* of this adventure is a simple one: Kill the Beast. We are required to gain entrance to the castle, successfully journey through a dangerous multilevel maze to eventually (hopefully) put ourselves in a position to deliver a deathblow. We cannot defeat the Beast bare-handed, and no equipment is provided before the game. Therein lies the *puzzle*.

Inside the adventure, the puzzle takes multiple forms. Knowing what the ultimate goal is leads us to explore in an effort to discover the details of the game environment. In the case of graphics-based adventures, *clues* may be pictorially displayed on the screen. More often, the pictures are for show and the meat lies in the verbal passages provided.

So the opening description reads: "You are in the desert outback. In the distance you see an unguarded tower rising into the sky. Available directions are north, south, east, west and down." This is followed by a terse question: "What now?," and a blinking cursor inviting your response.

The Journey

Well, in order to get there, you have to go there. Entering the command: GO NORTH elicits a quick reply: "You are lost in the desert." GO SOUTH brings us back where we were. East, south again and west all produce similar results; being lost in the desert is driving us crazy. The solution: an elementary adventure author trick that we might label GO [OBJECT]. Type GO TOWER and the screen responds "You are at the base of the tower. Icy mist partially obscures the closed door, but you can plainly see three glowing jewels: ruby, emerald and sapphire, embedded in the wall beside the door."



Photograph by Edward Judice

The author has chosen to describe his scenes as they would be interpreted by a barbarian or adventurer of his world, who would see glowing lights or lighted buttons as jewels. PRESS RED opens the door (that was smart), but the screen informs us that a narrow red beam of light, hotter than the sun, passes through our player/character's upper body, killing him instantly. Well, somebody forgot to turn off the laser, red is the wrong color to push—game's over. Welcome to the deadfall *trap*.

Traps and *barriers* are the author's way of giving you your money's worth in a game. Who's smarter, the author who devises or the player who defuses? The jewels are an example of a barrier that is a trap and a puzzle in one stroke. Pressing red is death by laser. Pressing blue activates a truly nasty sub-zero mist that also kills. Pressing green gives no initial response and now the player is back to pounding on the desk again. The correct sequence is green (no response), red (no response), blue (door opens, entrance gained). If this is the entry puzzle, just imagine what the goal puzzle is going to be like!

Who's smarter, the author who devises or the player who defuses?

Next to the true entrance is a ladder leading up the side of the tower. We type CLIMB LADDER, thinking it might be a less violent way in, which leads to a ledge. GO LEDGE and FOLLOW LEDGE result in several trips around the outside of the tower with the ladder coming into sight about once every three times FOLLOW LEDGE is typed. *Diversions* must sometimes be explored, but they can be a pain (or worse). No amount of coaxing will get the player/character back onto the ladder. Ultimately, only two ways of escape can be found: DOWN and JUMP, and both result in screaming, bouncing death. Needless to say, we soon abandon the ladder as merely one of the author's practical jokes. ►

The *reward* for all that aggravation and dying from pushing those jewels is entrance to the tower, but the same formula applies to any trap/barrier scenario. At the end of the hall beyond the entrance door is an upright cabinet with cryptic writing on it. Any time a player sees writing he automatically should type READ, but it doesn't help here. The player/character can't read the alien writing. (Later, elsewhere, a book in his native language is crucial, and if he's careless and skips it, he will end up in dire trouble.) Opening the cabinet is a breeze. Inside is a jeweled flute (author's description), decorated with a ruby and a sapphire. (It's really a hand laser. Red for kill, blue for stun—what a prize!) The cabinet is booby-trapped, and if it's not reclosed by a specific command, CLOSE CABINET, a deadly gas is emitted when a command to move is typed. Nasty, right? The flute is the reward, the gas is the trap, closing the door solves the puzzle. Onward and upward.

The adventure player is far from being at the mercy of the author. Although the author has descriptive phrases and cryptic puzzle-weaving at his disposal to make things tough, he must use logic in everything he does. A successful player employs this fact and his own logic to solve the puzzle. The author must always leave a way out, except in the case of a deliberate deadfall, and the player needs only to match wits to succeed.

Pressing On

Knowing that our swords-and-sorcery character is dealing with a technology situation in *Fear of the Beast* allows us to employ intuition in different situations. We may discover after a frustrating hour of blowing through a flute-shaped hand laser trying to muster a magic tune that POINT FLUTE followed by PRESS RED will cause a beam of red light to atomize a squadron of Alabastrian flight soldiers, or we might suspect technology (based on previous experience with colored jewels) and point it at a wall, melting some obscure unit of furnishing. We may discover that POINT FLUTE and PRESS BLUE will stun the same group allowing us to SEARCH BODIES to obtain a very important key, or we might stun our player/character by pressing blue while he's playing the flute. The possibilities are almost endless.

Each of the elements of an adventure is interlocking in that the program cannot progress beyond a certain point without a missing element. For example: The

Ten Golden Rules of the Victorious Adventurer

1. Look for clues, hidden or obvious, in the documentation and in the verbal descriptions offered on the screen. Watch for plays on words and puns, or things that look out of place. *Examine* everything! Sometimes an innocent rug can hide an important trap door.

2. Explore every nook and cranny. Go in every direction and to every object large enough to be important. Don't forget the directions UP and DOWN, even though they may not be listed in the official command set.

3. Pick up and carry anything movable. Get everything you can carry. Store the overload in easy to find places. Mazes can be conquered by dropping things and moving. If what you've dropped disappears, you've moved; if not, try a different direction.

4. Use or manipulate any object you can. Attempt to gain superiority over whatever you can carry or move. If it looks like it does something, chances are, it does. So try it! Shoot, open, close, push, pull, throw, bend and use are all verbs that apply action to an object, such as a lever extended from a stone wall. GET could make the lever come off in your hand. Make things happen.

5. Establish a pattern. Extrapolate the relationship between what is on the screen and the ultimate goal of the game. Try to think like the author; use his logic, then apply your own. If something or someone in the game defies the laws of the universe, look for other laws being broken. Soon it all becomes clear.

6. Don't get frustrated. If things aren't working, go drink a cold lemonade or call up an old friend and talk for a while. Calm down. Remember that you're paying the author good money to drive you crazy and he's just doing his job.

7. Employ as much vocabulary as you can muster. Some really obscure things can become perfectly clear by knowing the double meaning of a noun or verb. Look out for those words or phrases that mean one thing to you and another to the player/character. With the language of the text being used as interactive communication, wording is the author's best tool for trickiness.

8. Get into the game. Put yourself in the world of your player/character. If you wouldn't stick your hand in acid, probably he wouldn't either. But be bold: climb ladders, swim rivers, enter caves. Learn by doing. When your player/character dies, he can be resurrected with the reset button.

9. Make and keep a map. You'll sleep easier knowing it's there.

10. Share the adventure with your friends. Sometimes two (or five) heads are better than one. Above all, never give up—there's no such thing as an unsolvable adventure, only those yet to be solved.

flight soldiers cannot be successfully engaged without the flute. So bypassing the cabinet after it kills you once or twice simply results in death up the road. Atomizing the flight soldiers destroys the key, which assumes no importance until you try to open a weapons room without it or get torn to shreds attacking an armored beast with a hand laser when much heavier weaponry is required.

After slogging up and down corridors, engaging in laser duels with major and minor beasties and accumulating the necessary tools needed to gain access to the Beast's chamber (which suspiciously resembles a spaceship control room), the final combat begins. Having mastered the riddle of the weapons room key and being armed to the teeth, we at last begin to anticipate winning. We know that the hand laser doesn't work, but we're confident that the heavy laser (author's description: "jeweled heavy short lance, two jewels, emerald and ruby") will do the job.

Victory

PRESS RED knocks him down and he doesn't move. "He looks dead," says the screen. We shoot him again for good measure, then take a couple of treasure items and leave. When we get up on the hill the screen says, "You hear a roar like thunder. The Beast is awake and waiting for you!" The author has thrown us one last curve. We have to kill the Beast twice, and the second time we have to stab him with the jeweled knife, which is a control chamber treasure item. If we press the blinking emerald on the control panel and go straight to the hill in the shortest possible number of moves, "The tower roars into the sky on a billowing ball of flame, bearing the Beast back whence he came." We're a hero, and come out alive with some gold to boot (if we took what we were supposed to).

Words to the Wise

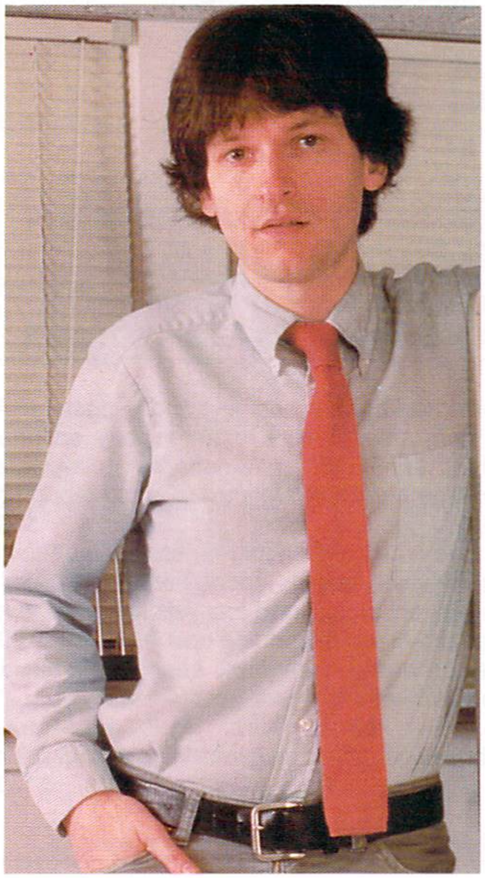
When confronting the adventure of your choice, remember to apply logic to the situation; think like the author. Use all available resources, documentation, wording of descriptions and the laws of logical progression as they exist in the world of the game. Try things, handle things, open things, manipulate things, take and attempt to use things. Explore everywhere you can go and take nothing for granted. Remember that you're paying the author to be hard on you. Things may not always turn out to be what you expect, but like the pieces of a puzzle, they will almost always fit together. If you solve a $29.95 adventure in two hours, then you probably haven't gotten full value for your money, whereas if you're still discovering new things after six months and getting "close" to solving it, you've made out like a bandit (entertainment wise).

Adventure can be challenging, descriptive and as engrossing as a full-length novel. The difference is that you are never a passive bystander. The player makes it happen—and he's loving it all the way. ■

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The Wizard of Wishbringer

A totally objective, highly critical and unbiased interview with Infocom game designer Brian Moriarty, ***by Brian Moriarty.***



At first I was elated when the editors of AmigaWorld *asked me to review my new Infocom story,* Wishbringer. *Here was a chance to sidestep the jaded critics and bland press releases, and tell the world the truth about the thankless life of a game designer! Eagerly I sat down and composed a long, flowing tribute to myself, backed up by a detailed autobiographical sketch, flattering color portraits and lengthy examples of* Wishbringer's *deathless prose.*

"Too biased," complained the editors after uncrating my manuscript.

"Of course it's biased," I snapped over the phone. "What did you expect from a designer reviewing his own game?"

After a heated exchange and many threats, I agreed to ditch the review and allow myself to be interviewed, but only on the condition that I ask the questions as well as give the answers.

Q: How did you become a game designer at Infocom? Did you join the company as a programmer in the microcomputer division, hacking in machine language on Ataris, Commodores and TRS-80 Color Computers, until one day Marc Blank, vice president and co-author of Zork, touched you with his magic wand and made you one of the few, the proud, the Implementors?

Brian Moriarty: Yes.

Q: Wishbringer *is your first game for Infocom, right? Where did you get the idea?*

BM: The design started with the game package. I was trying to think of something neat we could include in the box, a magical item that would tie in well with a fantasy theme. It couldn't cost too much, maybe a quarter tops, and it had to be easy to mass-produce. At first it was going to be a magic ring. But that's been done so many times before—Wagner, Tolkien, Donaldson, etcetera—that I decided to make it a rock instead. The story emerged from that.

Q: Describe the story in excruciating detail.

BM: [*Sigh*] Oh, all right. You play the part of a mail clerk in a small seaside village called Festeron. Your mean old boss, Postmaster Crisp, orders you to deliver a mysterious envelope to the Magick Shoppe on the far side of town.

When you get to the Shoppe, you meet an old woman who asks you to read the envelope. It turns out that her pet cat's been kidnapped by somebody called the Evil One. The ransom is Wishbringer, a magic stone famous in local legends. Your mission, should you choose to accept it, is to rescue the cat without getting turned into a furry toilet seat cover.

When you return to the village, everything is screwed up. All the familiar landmarks are twisted into sinister new forms. The streets are patrolled by giant army boots. Trolls, vultures, hellhounds and grues make your life difficult, and everything's under the all-powerful eye of the Evil One.

Fortunately, you're not completely alone. Friendly pelicans, platypuses and seahorses will help you if you're nice to them. And if you really get stuck, you can invoke the power of Wishbringer, the Magic Stone of Dreams.

Q: Infocom is famous for its clever packaging. What do you get when you buy Wishbringer*?*

BM: Besides the glow-in-the-dark magic stone, you get a facsimile of the mysterious ►

special-delivery envelope from the Evil One, a fold-out color map of Festeron and a booklet, *The Legend of Wishbringer*, that explains the origins of the stone and how to use it to make wishes. Oh, and you get a disk, too.

Q: Wishbringer *is billed as an Introductory Level game. Is it really just for beginners, or can veteran adventurers enjoy it?*

BM: Most of the problems in the story have two or more solutions. The easy way out is to use Wishbringer. If a beginner gets frustrated, he can whip out the magic stone, mumble a wish and keep on playing. Experienced players can search for one of the logical solutions—a bit harder, perhaps, but more satisfying. It's possible to complete the story without using any of the stone's seven wishes. In fact, that's the only way to earn the full 100 points.

The puzzles are highly interconnected. Once you start wishing your problems away, it's very hard to continue playing without relying more and more on the magic stone. The impotence of idle wishing—that's the moral of *Wishbringer*. All really good stories have a moral.

Q: How long did it take you to write this moral tale?

BM: I started coding in September of 1984. In December, I deleted most of what I'd written and started again. The disks went out for duplication on May 1st, so I guess it took nine months altogether. That's fairly typical for an Infocom title.

Q: How is an Infocom story developed, anyway? What kind of computer do you use?

BM: Glad you asked. Infocom's Z Development System is based on a DECSystem-20 mainframe, a machine that resembles a fleet

Tour of a Dream Factory

By Bob Liddil

Near a busy thruway, on the second floor of a large multi-story building, is a place that manufactures dreams: Infocom. Their new location, a carpeted art deco suite of offices and cubbyholes, is where adventures are created and produced for an eager public.

It is whisper quiet here. I am introduced to Brian Moriarty, the author of *Wishbringer*, who interrupts his new project to welcome me to Infocom. His tiny cubicle is personalized to the taste of a highly creative writer and programmer who has been around computers since before micros. He's an animated speaker, and talks in glowing praise of what it means to write an Infocom adventure.

"We don't clutter up the programs with pictures," he says, referring to the graphics-style adventures that mainstayed the markets of other micros in the past. "We let the words and descriptions tell our stories."

It's true. Hitchhiker's Guide to the Galaxy, a new Infocom offering for the Amiga, is a rollicking compliment to British author Douglas Adams' wry wit and general distaste for the mundane. Not a single byte is given to graphics, but the "pictures" are as eloquent as murals.

The computer in Brian's office is actually a terminal connected to a climate-controlled traditional mainframe coyly referred to as "Mother." The games are written in a sort of universal interpreter, which in turn writes the machine-specific coding that becomes the adventure.

"Each adventure is its own universe," I am told, as we stroll the corridors, popping in on assorted authors in various stages of their work. "Sometimes it takes more than one disk to tell the whole story, like Zork, for example."

Zork was originally written as a hacker's improvement on the concept of the original adventure, a noun/verb affair that offered little true interaction. It evolved into such a huge program that it had to be divided into three episodes of one complete disk each. Zork for the Amiga is ultra streamlined and sentence sensitive, as in "Get the ax and kill the dwarf," or "Roll up the rug and raise the trap door."

At the end of the corridor is an empty, silent room, an old computers' home and a graveyard for "dead" computers. There is a Dragon 64 from Tano, which never made it to general use, a couple of TRS-80 Model I's and a Model III, some Sinclairs, an early

of red refrigerators. All of the game designers are connected to it, so it's easy for us to share code and ideas and to play each other's games.

The programming language we use was created expressly for writing interactive fiction. It's called ZIL (for Zork Implementation Language). ZIL "knows" about concepts like rooms, objects, characters and the passage of time. It has instructions the designer can use to manipulate these concepts in very sophisticated ways.

ZIL itself is written in a LISP-like language called MDL, or Muddle, which was developed at MIT's Laboratory for Computer Science. Because ZIL and its utilities operate in a high-level environment, it's relatively easy for us to tinker around with things and make incremental improvements.

Q: Infocom games are available on every home computer I can think of. It must take a lot of programmers to do so many conversions!

BM: Naw. The Z System produces machine-independent code that can be executed on just about any computer with enough disk space and RAM. All we have to do is write a single machine-language interpreter for the computer in question. Once the interpreter is running, all of our present and future titles become available for that machine.

The Amiga interpreter was relatively painless. We simply downloaded the 68000 Kernal developed for the Macintosh and Atari ST systems and changed the I/O to make it work with the Amiga's operating system.

Q: One of the Amiga's big selling features is its graphics. Why don't Infocom's games use graphics?

BM: Why aren't all books illustrated? [*Pausing for effect*] Should we succumb to the temptation to throw in lots of cartoony pictures and special effects, just because the hardware is capable of it? We'd rather invest our development time in writing better stories, more evocative prose, making the user interface as transparent as possible, and getting rid of every bug we can find. We think these efforts result in a better interactive experience than what has been achieved with "graphics adventures." Our sales suggest that we're right.

That's not to say Infocom will never do graphics. We've been actively working on some graphics-oriented ideas for a couple of years now. But if the day comes when we offer a graphics-entertainment product, you can be sure it won't be *Zork With Pictures*.

Q: What about Cornerstone, Infocom's powerful, yet oh-so-easy-to-use database system for the IBM PC? Will there be a version for the Amiga?

BM: It's technically possible. Marketing-wise, I suppose it depends on how many machines are bought and what types of people buy them. You never know.

Q: What about you? Got any more game ideas?

BM: I've started work on a big science-fantasy game that will be released sometime in 1986. The story has an interesting historical angle. That's all I can say about it now...except that it will definitely *not* be for beginners! ■

Wishbringer *author Brian Moriarty, 28, is the newest member of Infocom's team of interactive fiction authors. He brings to the medium the stern morality of a rural New England upbringing and a lifelong passion for the fantastic. Write to him (or he'll write to himself) c/o Infocom Inc., 125 Cambridge Park Drive, Cambridge, MA 02140.*

Apple, assorted Commodores and Ataris, even a Tandy Color Computer. Infocom adventures are compatible with all these machines and a few more. Across the hallway is a roomful of IBM PCs and their clones, a "McApple" and a sparkling new Amiga. The Amiga is surrounded by enthusiastic Infocom staffers trying out a new game. Needless to say, with ten minutes of hands-on experience and a screenful of *Wishbringer*, I was hooked.

In my brief visit to Infocom, I discovered the secret to their quiet yet phenominal success: The people of the company, from the woman at the front door who answers the phone, to the MIT hacker alumni who prowl the corridors and depths of Mother's memory core. They are the soul of each adventure that bears the company logo. Theirs is a pride born of ability and the refusal to market anything but excellence—an attitude that carries over to the consumer who plays each game knowing he is not being looked down upon.

In the Infocom dream factory's quest for the consummate adventure, it is the consumer who is, ultimately, always the winner. ■

Programming on the Amiga: Cambridge Lisp 68000

By Daniel Zigmond

For a computer to become truly successful, it needs both well-designed hardware and quality software. The Amiga clearly has the former, but many skeptics still hold that it is lacking the latter. Cambridge Lisp provides us with some potent ammunition against this claim.

Although Lisp was one of the first programming languages, it has only recently received much attention from the personal computer world. The recent publicity about Lisp has both helped and hurt the language. Articles about Lisp have certainly encouraged many new people to learn it, but in some cases, they have also spread misconceptions about the language.

One of the most common misconceptions is that Lisp is difficult to learn. On the contrary, Lisp's interactive programming style makes it among the easiest languages to master. In fact, Logo has its roots in Lisp, and its phenomenal success among young people and hobbyists has been derived largely from features inherited from Lisp. Lisp is already used in introductory computer courses at schools such as Carnegie-Mellon University and MIT. Even non-computer science majors at these universities have found the language easy to learn and enjoyable to use.

The second most harmful myth about Lisp is that it is useful only for obscure applications in artificial intelligence research. At one time this was largely true, but because of the power and flexibility of modern versions of Lisp, it is currently used to write everything from games to word processors to operating systems. Lisp is still used in artificial intelligence, but it is also the language of choice for virtually all other applications.

Introduction to Cambridge Lisp

Lisp is an interactive language. This means programming in Lisp is much like having a conversation with the computer. The user types some Lisp code, the computer reads it, processes it, prints a response and waits for the user to type some more. The processing of the code is called *evaluation* and is often abbreviated *eval*. Thus, this conversational cycle is often called the *read-eval-print* loop and is the heart of all Lisp systems.

To start Lisp on the Amiga, simply type LISP. You should see something like:

```
Cambridge Lisp 68000 entered in about 380 Kbytes
Store image was made at 18:15:35 on 23-Apr-85
Lisp version-Vex X    image size = 79856 bytes
Started at 15:10:41 on 10-Jul-85 after 27.00
                                    -55.2% store used
Input:
```

For the time being, you can ignore everything except Input:. Input: is Lisp's way of telling you that it is ready to begin a conversation. We can ask Lisp to do some simple addition by typing

```
Input: (plus 3 4)
```

to which Lisp will respond with

```
Value: 7
```

and then

```
Input:
```

to signal that it is ready for us to type something else.

There are a few things you should notice about the above conversation. First, you can see that Value: is always typed before the computer's part of our conversation. Second, we used a somewhat strange notation in Lisp. The word *plus* was typed instead of a plus sign, and we put it before the numbers instead of between them. Third, we put our expression within a pair of parentheses.

Of course, addition is not the only thing Lisp can do for us. Some other words we can use in its place are *difference, quotient, remainder,* and *times.* These all use the same format as plus. For example:

Input: (difference 150 1)
Value: 149
Input:

More complicated problems can be solved by combining Lisp expressions.

Input: (times 3 (plus 2 1))
Value: 9
Input:

One of the reasons for Lisp's success is that it is not limited to these sorts of mathematical problems. In fact, Lisp stands for *list processing,* which is considered Lisp's most powerful feature. In Lisp, a list is any sequence of data in parentheses, and list processing is simply the manipulation of lists. Our first expression, (plus 3 4), is a list of three elements: plus, 3 and 4. All three of these elements are called *atoms,* because they cannot be broken down into any simpler form. Atoms that are words like difference, times, or even more creative ones like cindy or schoolhouse, are called *symbols.* The special symbols like plus that we can use to tell the computer how to handle data are called *functions.* Lists can contain any kind of data, including other lists. In the above example, there are again three elements, but this time they are the symbol times, the number 3 and the list (plus 2 1).

We can build lists with a function appropriately called *list.* To make a list of two numbers we just type:

Input: (list 42 149)
Value: (42 149)
Input:

Taking lists apart is just as easy. We use two functions called, for antiquated reasons, *car* and *cdr.*

Input: (car (list 42 149 305 7))
Value: 42
Input: (cdr (list 42 149 305 7))
Value: (149 305 7)
Input:

As you can see, car returns the first element of the list and cdr returns everything else. To compare two lists we can use the function *equal.* If the lists look the same, we get the value *t*; if not, we get *nil.*

Input: (equal (list 1 2) (list 1 2))
Value: t
Input: (equal (list 1 2) (list 2 1))
Value: nil
Input:

Functions like equal that return only t or nil are usually called *predicates.*

Another important feature of Lisp is the ability to customize the language by writing new functions. For example, to write a function that returns the second element of a list, we need only type:

Input: (de second (x) (car (cdr x)))
Value: second
Input: (second (list 1 2 3))
Value: 2
Input:

Using *de* to write our own functions is called *function definition.* We use the atom *x* to mean whatever piece of data comes after the symbol *second* in an expression. When we type (second (list 1 2 3)), Lisp evaluates (list 1 2 3) and substitutes the value (1 2 3) for x in our definition. It then evaluates the expression (car (cdr (1 2 3))), which returns 2, and prints the value.

All of this is only intended to give you a taste of Lisp. There are several good Lisp tutorials available. ►

However, there are some problems with using these tutorials to learn Cambridge Lisp; these will be described later in this article.

Cambridge Lisp in Detail

Cambridge Lisp for the Amiga was developed by Metacomco (201 Hoffman Ave., Monterey, CA 93940). It requires at least 512K and retails for $199.95. It is an incredibly rich Lisp implementation and includes many features that are quite rare for microcomputer Lisps. Cambridge Lisp allows for both single word and infinitely precise integers, as well as standard floating point numbers. Also, Cambridge Lisp has *rational* numbers. These numbers are of the form x/y, where x and y are integers. This allows for very accurate arithmetic operations.

To go along with all these types of numbers, Cambridge Lisp provides a large collection of mathematical functions that perform everything from division and square roots to 24-bit binary shifts, arc cosines and natural logarithms. There are many numeric predicates that cover all forms of comparison and type checking. Three functions are available to convert between types. For example:

```
Input: (rational 1 3)
Value: 1/3
Input: (float 49)
Value: 49.0
Input: (float (rational 1 3))
Value: 0.3333333
Input: (fix 32.0)
Value: 32
Input:
```

Cambridge Lisp has all the list processing functions you would want, including the usual ones like *car, cdr, cons, list, append, nconc, rplaca, rplacd* and *consp*, and some very advanced functions for dealing with lists as sets or trees, association lists, property lists, dotted pairs and circular list structures. It is one of the most complete sets of list processing functions you are likely to find in any Lisp implementation. The symbol manipulation functions are similarly diverse.

While Cambridge Lisp lacks both *do* and *let*, there are many of the standard control structures, like *cond, prog, progn* and the mapping functions, and some more powerful ones to facilitate dynamic non-local exits, conditional branching and complicated iteration. There are many functions to combine these structures and create all kinds of functions. User-defined functions can have a fixed or a variable number of arguments and can take these arguments either evaluated or not. There are also functions for both macro definition and macro expansion.

The stream- and buffer-based input/output functions are very impressive. These include many more than the usual printing and reading functions and additional functions for prettyprinting. The user also has complete control of the readtable through a large set of character functions and predicates.

Cambridge Lisp has many more functions that are extremely rare among microcomputer Lisps. It includes an interface to AmigaDOS, support for general vectors and strings, 266 different error codes and both normal and fluid variables. One of its nicest features is the degree to which Cambridge Lisp can be customized. The user can change the amount of memory Lisp uses, redefine the way Lisp handles errors, fine tune the compiler and debugger or even modify the two basic prompts. Both the *editor* and the *trace* function are included to simplify the writing of long functions, and the *compiler* can increase the speed of the final product code. For storing code, there are functions for saving entire core images as well as individual functions. Functions can be collected into modules that are loaded only when the functions are needed.

Caveats

All of these features make for one of the most advanced Lisp systems I have ever seen. However, Cambridge Lisp makes little attempt to be usable by a novice programmer. Although one can certainly learn Lisp

The History of Lisp

Lisp is one of the oldest programming languages, second only to Fortran. It was invented by John McCarthy in the late 1950's. Lisp was quickly implemented on many machines, and virtually all versions of Lisp were compatible with each other. The first version of Lisp was known as Lisp 1.5 and was the basis for practically all other dialects.

During the next decade, however, several distinct families of Lisp began to appear and were soon available on a number of computers. There was no guarantee that a program written with a particular version of Lisp would run on another version. Furthermore, in cases where programs could be transported from one Lisp to another, the programs often yielded completely different results. These problems not only existed between computers, but between versions of Lisp on the same computer! Programmers had to keep track of which Lisp they had used and take detailed notes on exactly what the program was supposed to do.

In 1966, a standard Lisp was finally proposed by a group at the University of Utah. The main purpose of this standard was to allow the REDUCE computer algebra program to be used on many computers. This became Standard Lisp.

Standard Lisp underwent many changes until the final specifications were published in 1979. Cambridge Lisp is based on this final standard, although it also borrows some important features from two more modern dialects, called Portable Standard Lisp and Common Lisp. Both of these are widely used in computer science today. This combination makes Cambridge Lisp powerful and flexible, as well as compatible with Lisps on many other computers.■

using this software, for several reasons, it's not as easy as it should be.

First, Cambridge Lisp was originally written for large mainframes to provide an environment for computer algebra research. This means that the system is not tailored for the Amiga and is missing some of the niceties that Amiga users might expect. While this does not detract from the system as a powerful software development tool, it does make it less friendly than it could be.

Second, the documentation leaves something to be desired. As a reference manual, it is fair, but it makes no effort either to teach Lisp or to give references to good tutorials. The index is poor and the descriptions of individual functions make far too much use of cross referencing, forcing the reader to constantly flip back and forth between sections.

Finally, Cambridge Lisp is not compatible with many other dialects of Lisp. It is quite different from the most popular dialect, Common Lisp, and thus cannot be used with the many Common Lisp-oriented tutorials (see reference 4). It is instead based on Standard Lisp, and is therefore somewhat compatible with Portable Standard Lisp. Although some notes on compatibility are given, transporting large amounts of code from other dialects would be difficult.

Summary

Despite these few faults, I like Cambridge Lisp very much. For experienced users, it is among the finest versions of Lisp available, and patient novices will find their time and effort well rewarded. Cambridge Lisp will certainly help popularize the Amiga as an advanced programming tool as well as increase the diversity of Amiga software by giving serious developers an innovative environment in which to work. ■

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Special thanks go to Dr. Scott Fahlman for his help in the preparation of this article.

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TLC-Logo for the Amiga

LISP, Turtles and Artificial Intelligence

By Peggy Herrington

Logo, long recognized as one of the most powerful programming languages to come along, was derived from the interpretive mainframe language LISP (an acronym for List Processing) in the late 1960s. Although LISP is still widely known for its artificial intelligence capabilities (along with a somewhat inscrutable syntax), a good deal of it's power and flexibility was captured successfully in the Logo distillation, evidenced by the latter's sweeping popularity in classrooms and homes alike.

Yet despite this widespread acceptance, John R. Allen, renowned Logo/LISP programmer and co-author of a delightful little book called *Thinking About (TLC) LOGO* (CBS College Publishing, $17.45), claims that Logo's potential as a gateway to artificial intelligence and its general-purpose programming excellence are largely unknown to the community-at-large. This, Allen explains, is the result of compromises made by early proponents of Logo as they sugar-coated the wonderful introductory powers of the language when translating it to various systems, modifying, and in some instances leaving out, internal structures necessary to access Logo's higher levels of power.

The Turtle Elite

As president of The LISP Company ("TLC") of Los Gatos, California, Allen is taking steps to revitalize Logo through the implementation of TLC-LOGO for the Amiga. Not only does this new, more powerful version of the language take full advantage of the Amiga's multi-processing and superior graphics and sound capabilities, it incorporates two fundamental LISP concepts that are missing from traditional versions of Logo: the ability to use functions as building blocks and the handling of first-class objects as data. Although traditional Logo looks tc the novice like an abbreviated LISP without parentheses, the fact that none of Logo's popular versions (including those for Commodore and Apple) retain this LISP connection has made Logo synonymous with the Turtle Graphics developed by Seymour Papert and his team at the Massachusetts Institute of Technology. Even though TLC-LOGO features the ubiquitous turtles, Mr. Allen is quick to point out that all turtles were *not* created equal.

The Big Picture

Before the intricacies of an artificially intelligent Amiga can be fully appreciated, however, it's important to see Logo and AI's position in the overall scheme of things.

The methodology (or language) by which man communicates with computers still has its roots deep in mathematical soil. The three general "families" of programming languages all owe allegiance to their mathematical precursors:

► Procedural—High-level, general-purpose languages such as Pascal, Basic, Fortran and traditional versions of Logo.
► Relational—Logic-based languages like Prolog; systems that are vaguely similar to spreadsheet programs.
► Functional—LISP and thus Scheme, Smalltalk, and in theory, all Logos.

True relational languages aren't available for personal computers yet, which leaves us with the procedural and functional types. For our purposes, the primary distinction between the two lies in how they address problem-solving.

The Power of Functions

Procedural languages like Basic are binary-based number crunchers that require all data to be reduced to numerical form. They insist upon being provided with a method—an algorithm—for solving any given problem each time it is presented; a way of doing things that experience has shown to be perfectly acceptable for business and scientific applications. However, when intelligence is required of a machine, when it ►

By reimplementing certain LISP techniques, TLC-LOGO provides a learning path from traditional Logo to small-scale AI programming.

comes to emulating the organization of thought, to problem-solving and achieving goals, in short, to adopting the characteristics of the human brain, procedural languages fall short of the desired mark.

This is not because "intelligent" behavior is not at all understood—to a large extent it is. The problem has more to do with the data itself, the patterns, groupings and classifications that constitute our intellectual ability to impose order on chaos (which turns out to be the key to abstract thought), and the difficulties encountered with getting data like this into the numerial form required by a procedural language.

Rather than dealing in numbers, functional languages like LISP and TLC-LOGO use objects, relationships and patterns. Although this side-stepping of numerical input is an integral part of AI, the real reason for LISP's success is functional relationships. Functions? Yep, remember struggling with them in high school algebra . . . Plotting points on x and y axes on graph paper? Well, unless you want to, there's none of that in Amiga TLC-LOGO, but perhaps you remember that a function is the relation of one item from a set, with each item from another set. This means that functional languages including Amiga TLC-LOGO can feed the results of one computation directly to another with no external intervention. This feature, absent from traditional versions of Logo, is an implementation of LISP. Working with functions as building blocks, freely passing parameters and computational results between them is one of the elements that distinguishes TLC-LOGO from the "electronic etch-a-sketch" Logos criticized by Allen.

Visualization

The goal of artificial intelligence is to get machines to "think," and that process is now thought to be largely a matter of visualizing a problem, planning action and breaking the problem into small, manageable pieces. One of the greatest scientific minds of all time, Albert Einstein, was slow to talk as a child. In later life, he came to see this "handicap" as an advantage because he visualized problems and their solutions in terms of shapes and images rather than words and symbols. He attributed much of his contribution to physics to this technique.

A programmable "turtle" is used to enhance visualization in Logo, and it is to this little intelligent cursor that instructions are directed. An arbitrary number of independently functioning turtles may be "hatched" in Amiga TLC-LOGO although having more than ten in simultaneous processing noticeably reduces the machine's operating speed. Still, the Amiga's multi-processing capabilities make it possible to have dozens of pages of processes at once, each with its own set of turtles. As Allen points out, these Amiga turtles are a breed apart from those residing in traditional Logo. Each and every one is treated as a first-class object between which parameters may be freely passed (which means there's no need for GOSUBs or RETURN statements), a return to the power of LISP which far outreaches the simplistic (by comparison) capabilities of traditional Logo.

Turtle Synergism

The power and flexibility of TLC-LOGO turtles becomes more apparent when you realize that they need not live out their lives in that form. Turtles can be anything you want them to be and in TLC-LOGO are often referred to as "first-class objects." An object is simply a collection of data, for example, a list of the characteristics that distinguish a chair from, say, a table; or the pattern which makes up a formal rule of logic.

Logo provides an environment for combining objects and constructing complex routines without the need to redefine anything that was previously established: it is simply called by name. Rather than making the programmer supply the method of solving a given problem, TLC-LOGO (because it is a truly functional language) will try to solve it from these previously defined patterns and routines. These combined features have a synergistic effect: the whole is somehow more than the sum of the parts. By reimplementing the missing LISP techniques, TLC-LOGO provides a continuous learning path from the marvelous introductory turtle graphics of traditional Logos to the power of small-scale AI programming.

The Fifth Generation

In his book *Thinking About (TLC) Logo* John Allen reminds us that "the home computer is not just an electronic typewriter, a low-quality stereo, or a game machine: it has the potential to change the way the world thinks." The Japanese are at work on an artificially intelligent fifth-generation computer, their efforts transversing all social, economic and geographic boundaries. They have further vowed to complete the project prior to the end of the century. Machines endowed with AI are sure to change the way we think, even if they take over only mundane tasks like troubleshooting and scheduling. Still, imagine the unique and sophisticated ideas that could come from the combined efforts of man and thinking machine.

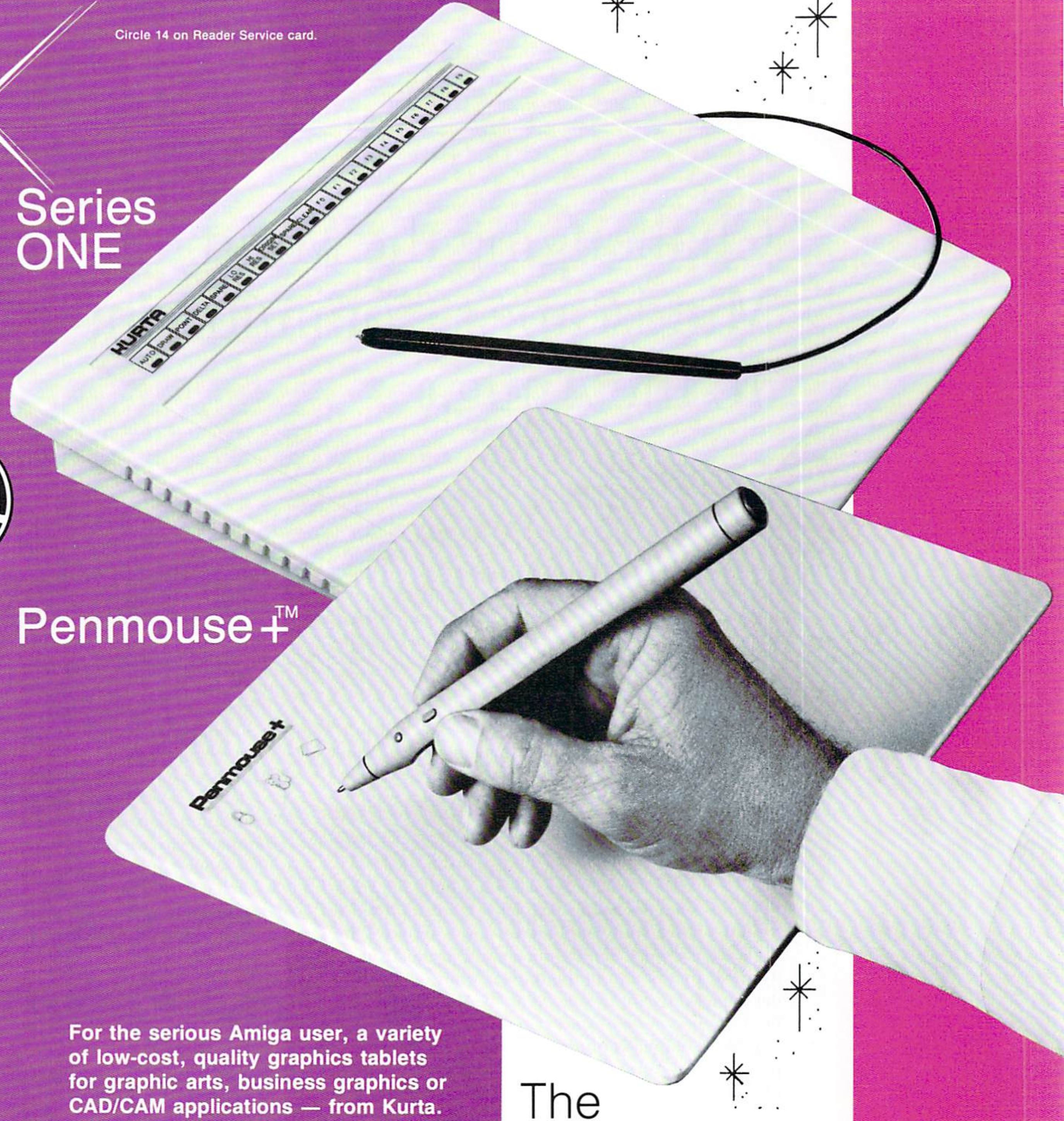
Shortly after the Japanese made their pronouncement, artificial intelligence projects were launched in the United States and Europe. However, not only are these efforts on a much smaller scale than those of the industrious Japanese, but the prime benefactor is our defense establishment. We must do more than that. Like the Japanese, we must tap into all available talent: independent parttime programmers, third-party developers, professors, private, along with government-sponsored, researchers and students alike.

Putting tools such as TLC-LOGO running on powerful systems like the Amiga into the hands of resourceful Americans and Europeans may be the means through which the West can meet the challenge of, or surpass, the research being done in Japan. Whatever the outcome, the advances in this area will surely change the way we view the relationship between man and computer, the thinking machine. ■

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Challenging the Mind: Mindscape's Commitment To the Amiga

By Shawn Laflamme

Software developers who jump on the Amiga bandwagon will find that creativity and imagination are as indispensable to the development of Amiga software as technical expertise and marketing skill. One company that has been successfully meeting this challenge all along is Mindscape.

Mindscape's philosophy is ideally suited to the demands of Amiga software development. Their purpose is to produce "software that challenges the mind." Mindscape's software offerings for the Amiga can be called educational, stimulating, entertaining, even bizarre—anything but mundane.

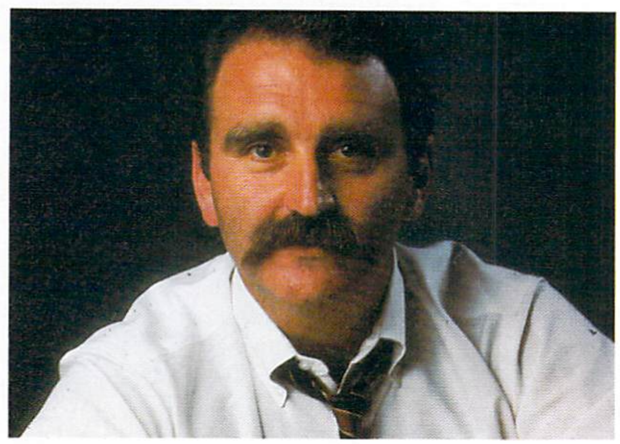
Located in Northbrook, Illinois, Mindscape was created in 1983 as the computer software subsidiary of SFN Companies, an educational publishing, information and communications company. Mindscape's focus is on the home and school markets, with software titles in the educational, entertainment and productivity/utility areas. In addition to the Amiga, Mindscape has developed software for the Apple II, Macintosh, IBM PC, Commodore and Atari systems.

With an emphasis on the creative rather than the corporate, Mindscape's 70 employees are housed, appropriately, in a building that once served as an art gallery. Instead of the cubicles and partitions of the typical office building, the atmosphere here is ultramodern and futuristic, with a heavy emphasis on natural light and plenty of free space. The intention behind this freer design was to create an environment where people would feel comfortable so that they could do their best creative work. The effort has been acknowledged with an interior design award from the American Institute of Architects.

Roger M. Buoy, President and Creative Director of Mindscape, is confident about the Amiga's future and his company's role in supporting the machine. His enthusiasm for the Amiga reflects the prevailing opinion at Mindscape. "I was excited about the Amiga from the first day that I saw it," says Buoy. "It offers so much, from animation, to sound, to graphics, that we will be able to do things in these areas that we have never been able to do before. It's like having many new dimensions added to the ones we've been working with."

Buoy brings to Mindscape over 20 years of professional experience, primarily in electronic publishing and marketing. He was previously an executive vice president at Scholastic, Inc. before joining Mindscape in October 1983.

Mindscape's programs and projects are conceived by people who work directly for Buoy or by himself. The "creative function" at Mindscape consists of three groups: a Technical Group, Creative Design and Art, which report to Buoy. As Creative Director, Buoy makes the final decision on whether an idea should reach the development stage, and he gives final approval to art, screen layouts and packaging.



Roger M. Buoy, President and Creative Director of Mindscape.

Mindscape publishes four lines of software: Sprout, Pixelwerks, Alert and Folio. Sprout programs, for ages four through eight, are designed to help kids develop early learning skills and discover their creativity. Pixelwerks, for ages eight and older, encourages further creative development. Alert is Mindscape's line of recreational software for teens and adults, designed to be both entertaining and challenging. Folio is a line of productivity/utility software for home use.

The Amiga Commitment

Mindscape's commitment to the Amiga and its owners begins on the ground level with the Amiga Tutor, a tutorial program on using the Amiga. Commodore initially approached Mindscape and asked them to prepare the tutorial, which is being provided to all new Amiga owners with purchase of the machine. The program illustrates the Amiga's graphics capabilities and introduces the machine's major features. It gives the first-time user an overall understanding of the Amiga itself, AmigaDOS, its operating environment and its components. It makes very little use of the keyboard, since most of the information provided is accessible with the mouse. The tutorial is intended as a supplement to, not a replacement for, the Amiga manual, but it does help to relieve the new owner's itch to put the manual aside and get his hands and eyes on the machine.

In their support of other computer systems, Mindscape's emphasis has always been on education and entertainment, and they intend to continue on that course with the Amiga. In the educational field, the traditional drill-and-practice variety of software is as alien to Mindscape as office cubicles and time clocks. Even in the drill-oriented activity of learning to type, Mindscape's Keyboard Cadet ($39.95) turns the process into a game as it teaches users to touch type on the Amiga keyboard. The program recently received a Parent's Choice Award from *Parent* magazine.

The Art of Simulation

Buoy and his associates at Mindscape realize the educational effectiveness of simulations, and it is in this area that they will concentrate their development efforts. One of their first educational programs for the Amiga, The Halley Project: A Mission in Our Solar System ($44.95), is a real-time simulation of the solar system. This is a new version of the program that was originally released for the C-64, Atari and Apple II, and it exploits the Amiga's advanced graphics and sound capabilities. It is a game-based introduction to the solar system for ages ten and up. Players must complete a series of rigorous tests; along the way, they're required to master facts about gravity, orbital motion and navigation by the stars.

The Alert Line

Even Mindscape's Alert line of recreational software is designed to provide an intellectual challenge. They are avoiding the arcade-type shoot-'em-ups and concentrating on adventure, mystery and humor, attempting to attract a more sophisticated audience.

Their first offering in the Alert line for the Amiga is Deja Vu: A Nightmare Comes True ($49.95), a graphic text adventure scheduled for release in the first quarter of 1986. The program makes use of the mouse, windowing, hi-res graphics, font styles and icon capabilities of the Amiga, allowing players to see the characters, props and action.

Developed by TMQ of Buffalo Grove, Illinois, Deja Vu incorporates the characters, props, intrigue and suspense of a 1940s Hollywood mystery. As the central character, the player, suffering from amnesia, is accused of a murder. He must solve the crime and find his true identity before he is arrested. He could discover that he has been set up, or, that he actually did commit the murder in his foggy past.



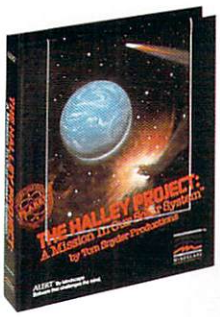


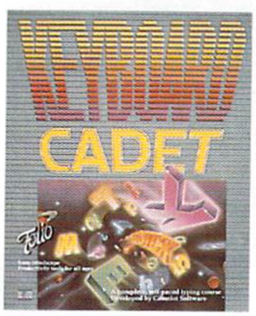
Mindscape's headquarters in Northbrook, Illinois.

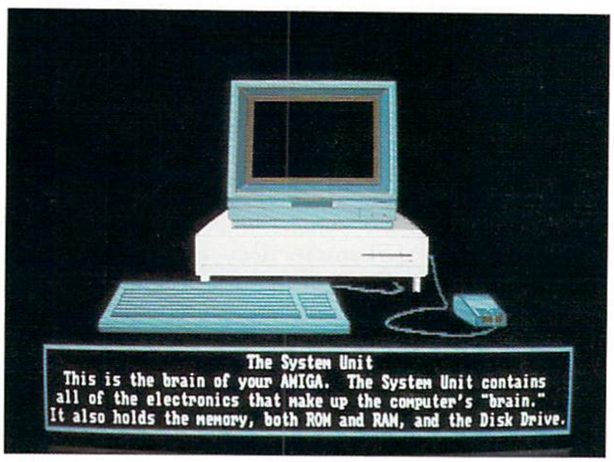
The program remains faithful to the 1940s theme in both the graphics and the tone of the text. With the windowing feature, several aspects of the game can be seen on-screen simultaneously, and by using the mouse, props can be moved from one window to another. Die-hard text adventure purists might scoff at the graphics (even the Amiga's graphics), but this graphics/mouse/windowing system does eliminate some of the frustrating language barriers encountered in text-only adventures.

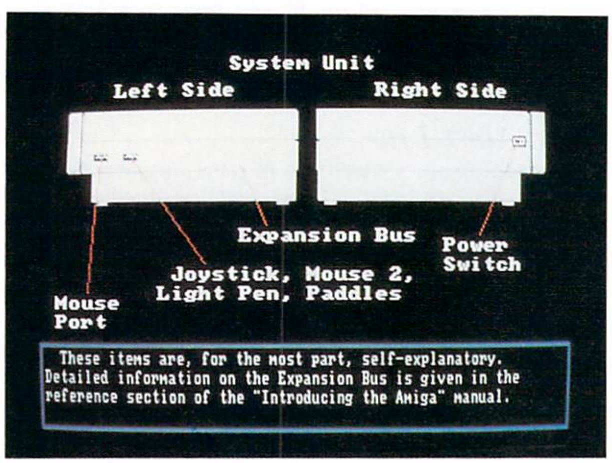
Artificial Insanity

Speaking of language barriers, Mindscape is also making a bold, or rather, bizarre attempt to bridge the language gap between humans and computers. Racter ($44.95), short for raconteur, is designed to let you have a spontaneous conversation (of sorts) with your computer. Developed by Thomas Etter and William Chamberlain, Racter will be released for the Amiga in early '86. The program was recently placed on display at the Boston Computer Museum.









Mindscape's Amiga Tutor

Mindscape, Inc.
3444 Dundee Road
Northbrook, IL 60062
1-800-221-9884
1-800-942-7315 (in IL)

Racter may fall short of artificial intelligence, but it's a fine example of artificial insanity. With a 2,800-word vocabulary and a knowledge of English grammar, Racter responds to your questions in complete, though not necessarily logical, sentences. Each conversation is different; it's unlikely that Racter will ever respond to the same question in the same way.

During the course of a conversation, the program stores some of your own words and phrases and then reinserts them later in the conversation. Racter's intellectual prowess is not unlimited, but if a topic baffles him, he will adroitly change the subject.

For a demonstration of Racter's capabilities, look into *The Policeman's Beard Is Half Constructed* (Warner Books, $9.95), a title derived from Racter's unusual conversational style. This book is a mix of poems, dialogues, limericks and simple statements, demonstrating Racter's language abilities, literary talent and lunacy.

Racter has also spawned a rather unusual users group, called the Institute of Artificial Insanity, open to all users who complete and send in the Institute's application form along with "before Racter" and "after Racter" photos of themselves that depict how their experience with the program has changed them.

According to the Institute's tongue-in-cheek brochure, only the first one million applicants will be accepted. An optional yearbook is available to applicants for $15. It includes, among other things, each applicant's picture, name, hometown and philosophy of life in ten words or less, allowing Racter groupies to get to know each other. The honor of class valedictorian will be bestowed on the applicant whose photos and application best reflect the influence of Racter.

When asked how he feels about all this attention, Racter replied, "I'm maniacal, unhinged and enraged."

Future Development

Developing software for any new computer is a gamble. Mindscape has invested a lot in the future of the Amiga, and Roger Buoy feels that their faith in the machine is justified. He sees the educational market as one area where the Amiga might emerge as a strong competitor. "It is possible on the Amiga to turn out very realistic simulations and to do lots of things in areas where we have been limited with the Apple II," says Buoy. "I think it's going to take a while for the Amiga to get into schools, but once again, it has so much to offer that it must be a very attractive purchase for a school that wants to do a multitude of things with it."

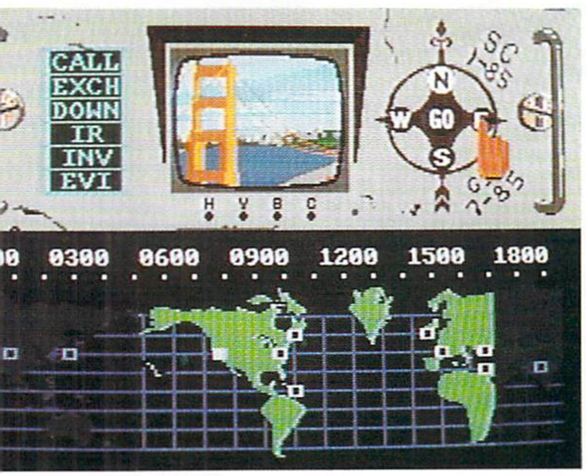
As for future software development, Buoy stresses that our cognizance of what is possible changes with events. "We've always been constrained," he says, "and no doubt, in time, the Amiga will constrain us. I see the Amiga as the next link before we encounter even more sophisticated, Disney-type animation in a consumer appliance."

Until that happens, Mindscape will be using the Amiga to entertain, stimulate, and above all, challenge you in some pretty imaginative ways. After all, creating challenges is what Mindscape is all about.■

Address all author correspondence to Shawn Laflamme, c/o AmigaWorld *editorial, 80 Pine St., Peterborough, NH 03458.*

What's New?





"Living" Novels

Activision has announced the release of two "living" novels for the Amiga computer, called Hacker and Mindshadow. The two games are a combination of transitional interactive text adventure and graphics that make full use of the Amiga's capabilities for producing high-quality visual images. The games also make use of the Amiga's windowing, menus and mouse-driven interface features as well as keyboard entry of instructions.

A "living novel" takes the text and plot structure of a novel and adds animated illustration and player interaction.

In Mindshadow, you awaken on the beach of a desert island. You have lost your memory. From there you must search and question and explore your surroundings, looking for your lost identity.

Hacker lets you enter the underworld of computer crime. The instructions are minimal. "Insert disk, load, the rest is up to you." From there you are met with the screen prompt "Please Logon", and you are left to explore the unknown computer the same way that a real "hacker" might when breaking into some company's mainframe.

But who's computer have you entered? Who is running the system? There seems to be something strange going on in the system, but can you even be sure that there is a mystery?

Both games take interactive fiction a few steps further than just words on a screen, and Activision is working on many more.

Guy Wright

Activision, Inc.
2350 Bayshore Frontage Rd.
Mountain View, CA 94043
415/960-0410

Electronic Novels, Text Adventures and Fantasy

Traditional adventure games for most computers involve simple descriptions, simple actions and simple options. Adventure games have gone through a number of changes and advancements in the past few years, becoming more sophisticated in both their scenarios and the way in which they operate.

Synapse Software is releasing different types of adventure games for the Amiga that they are calling "electronic novels." The difference between a traditional adventure game and an electronic novel is an accompanying book sold with the program.

The book serves multiple functions in the playing of the game. First, it's good reading in itself. The stage is set, the characters are described, and before you load the software, you are already involved with the story.

Second, the book acts as a form of copy protection. The disk can be backed up as many times as desired, but in order to play the game, you are asked to enter different words out of the book (e.g., fifth word, fourth line, page 57). This means that in order to use the game, you need the book. (The cost of photo-copying a one-hundred-page book should prevent most piracy.)

Synapse has also chosen some non-standard scenarios for their games. Rather than the typical haunted castles or desert islands, games like Mindwheel, Brimstone and Essex offer new challenges, settings and bizarre locations. Combined with their imaginative writing, the games stand apart. Each of the games is a collaborative effort, with the author of the story and a team of programmers who integrated the story's contents into a computer game. The results are distinctly unusual, amusing and entertaining.

In Mindwheel by Robert Pinsky (author), S. Hales and W. Mataga (programmers), you must travel through the minds of four deceased geniuses, all psychically linked through time.

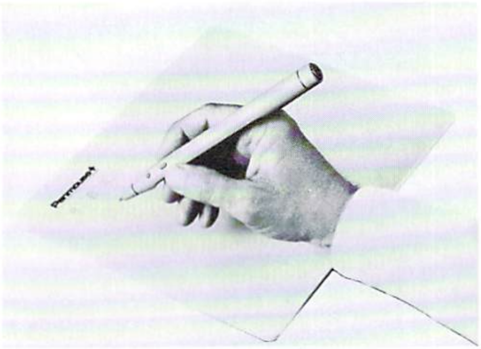
In Brimstone by James Paul (author), D. Bunch, W. Mataga and B. Darrah (programmers), you plunge into the underworld of Ulro through the dreams of Sir Gawain, Knight of the Round Table.

In Essex by Bill Darrah (author), B. Darrah and W. Mataga (programmers), you are on an intergalactic search-and-rescue mission aboard the Starship Essex.

These are the kinds of worlds you can expect to explore in the Synapse electronic novels for the Amiga. They are well-written, intriguing, difficult games for more than just kids. They are tough and frustrating and funny and different.

Guy Wright

Synapse Software
5221 Central Ave.
Richmond, CA 94804
415/527-7751



Kurta Releases the Penmouse +

What looks like a pen but operates as a mouse or graphics tablet? The Penmouse + from Kurta Corp. The Penmouse + is a lightweight, cordless, two-button, pen/graphics tablet combination input device. The tablet is 8½" × 11" × ¼" thick, with an active graphics tablet area of 6" × 9". It weighs only two pounds. The pen itself is battery powered, has two side-mounted buttons and a "pen down" function.

The advantage of the Kurta Penmouse + is that it can act as a graphics tablet with absolute positioning, or like a mouse with relative positioning. This combination results in freedom of movement. You can simply point to a menu selection instead of rolling to it; the Penmouse will display position even when the pen is not touching the surface of the tablet. It will operate at any angle for a right- or left-handed person. The Penmouse + also offers greater accuracy in drawing and tracing or when used as a control device (200 ppi when used as a tablet or 100 ppi when used as a mouse).

The Penmouse + offers Amiga users an alternative to the mouse, incorporating the best features of other mechanical input devices. Kurta is also working on a full line of professional graphics tablets for the Amiga. We will be taking a closer look at the Penmouse + and other input devices from Kurta in future issues of *AmigaWorld*.

Guy Wright

Kurta Corporation
4610 S. 35th St.
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Tecmar's Family of Peripherals Expands Amiga's Capabilities

Tecmar has introduced four products for the Amiga that will give you more power and allow you to communicate with other Amigas (and, just to be sociable, IBMs, Apples, or anything else equipped to "talk" with another computer).

Expanding with T-Card

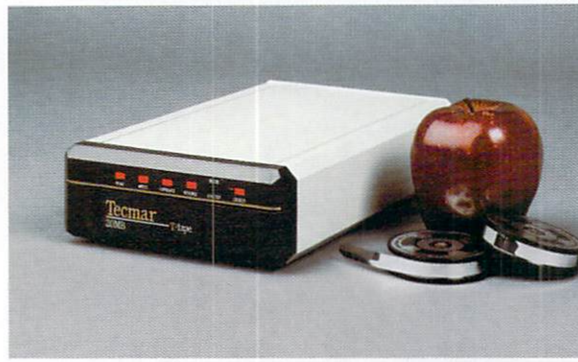
Tecmar's multifunction expansion module, named T-card, snaps on the right side of the Amiga's main console to expand the capabilities of your machine. The T-card gives you:

- A clock and calendar with a standby battery so you will only have to set the time and date once in the life of your computer.
- A built-in power supply giving you time to save whatever data you have in your computer when the electric company or an errant foot cuts off the power to your Amiga. (If you've ever had a whole day's work wiped out, then you know the importance of this feature.)
- A parallel printer port so you can connect such standards as Epson printers to your Amiga.
- A serial port and bus expansion port for Amiga add-ons, including other Tecmar products.

The T-card costs $799, but can also be purchased with a whopping 1,000,000 (1MB) extra bytes of memory for $999.

Twenty-two Disks in One

T-disk, Tecmar's 20MB (twenty million bytes of memory) unit is a hard disk for the Amiga whose magnetic media is the same 3½ inches in diameter as a floppy disk's, yet it holds the equivalent of twenty-two regular diskettes. The T-disk costs $995 (and hooks up to the T-card, which you'll also need to purchase), but it virtually eliminates the need to mess around with regular disks, since you can store all of your programs and files on the hard disk. In addition, T-disk is much faster than the regular disk drive, which is important when you are dealing with large amounts of memory.



If the data you are saving is very valuable, you may want to spend the $595 needed to buy T-tape, which is a tape backup system that can hold the 20MB of the T-disk. Even though the hard disk is physically very safe, operator error or a sudden power loss can zap some or all of the contents of your T-disk; with T-card, however, you can selectively restore files within a matter of minutes.

Going On-line

Until recently, most modems for personal computers ran at about 300 or 1200 baud. The latter was relatively quick since a person usually couldn't read the data appearing on the screen faster than that. Tecmar's T-modem, however, works not only at 300 and 1200, but also at 2400 baud, which means that transferring a lot of data from the Amiga ("uploading") or getting a lot of data from the telephone line to store on the Amiga ("downloading") doesn't have to take long at all. In addition, the T-modem costs a relatively modest $695 and can interface with the audio circuits of the Amiga.

Tim Knight

Tecmar
6225 Cochran Road
Solon, OH 44139
216/349-0600



Amiga Solutions

Reflections of a Mac User

By Bryce Wray

It isn't easy to write this. No one, particularly a native Texan, likes to admit that he has been one-upped. But this Macintosh user has seen the future, and it's the Amiga from Commodore.

As I write this, it is barely 13 months after that memorable day in July 1984, when I first plunked down my hard-won loan money (groveling does the trick every time) at a local computer emporium and gleefully carried out four boxes full of Macintosh stuff: the Mac itself, an external disk drive, an ImageWriter printer and a printer interface cable. Back then, it was a half-hour's drive from that store to my home, and I could barely contain myself for wanting to get into all my treasures.

During the next several weeks, I got little sleep as I MacWrote and MacPainted myself silly. And, when the fall came, my Mac was every bit as useful as I had hoped that it would be in helping me wade through the complexities and headaches of my new job as Assistant Professor of Radio/Television Technology at Texarkana (Texas) Community College. Indeed, I would have been absolutely doomed if the Mac hadn't given me exactly what I bought it for: mighty computing (primarily word processing) power without my having to devote many hours I couldn't spare to burying myself in manuals, tutorials, etcetera.

Even so, I knew it wasn't perfect. After all, it was quite slow in doing some of the magic even a simple word processing program such as MacWrite demanded. (I was in for a real shock the following summer when I got hold of the far more complex Microsoft Word!) It was obviously straining hard to work with only 128K RAM, although the extra disk drive helped somewhat. At least I wasn't swapping disks left and right, the way many a "Skinny Mac" owner with no extra drive was forced to do.

Then Apple made available an upgrade to 512K, which supposedly would make the Mac fly. Fine. Except that they wanted $1,000 for it, and at a time when the "Skinny Mac" I had bought for $2,495 was already being sold for well under $2,000 hither and yon, and the new 512K Macs were being sold in some stores for not much more! I seethed, but decided I would do it. . . only later. I needed to pay off some of the *old* debt first.

As already mentioned, I bought Microsoft Word for the Mac recently, having been persuaded of its excellence by at least two glowing reviews. However, I soon learned that one particular selling point made in one of the reviews, that it "works perfectly well in 128K," was a bunch of Boolean bull. It works, yes. But "perfectly well"? Well, maybe. Depends on what you call working "perfectly well." I, for one, do *not* give such praise to a program that prints only four to eight pages an hour in high-resolution mode—an excruciating thing to watch, as if my poor printer were constipated! Nor do I consider pitifully slow screen updating, which doesn't always zip to where I am typing, working "perfectly well." However, I figured, surely I could put up with some slowness to achieve good results.

Finally, I decided it was time to upgrade my overworked Mac from 128K to 512K. Fortunately, the price had come down—to $700. Then I learned that I had finally succeeded in getting a credit card to use at one of the two authorized Apple dealers in town and could use it in just a few days. It seemed that, finally, I would have, as Danny Goodman described the 512K "Fat Mac" in the November '84 issue of *MacWorld*, "a super-fast, state-of-the-art computer" humming on my desk. Except for one thing.

That same day, I went to the grocery store and, as usual, picked through the computer magazines to see what was new. Three of them had the Amiga on the cover.

I took them home. I read them. The amazing details they conveyed were, for a Mac-backer such as I, hard to swallow. (I'm still a Mac-backer; I just no longer like the Mac best!) But, as the hours, then days, wore on, I came to a somewhat sad realization: My trusty Mac was obso- ►

Illustration by Paul Mock

◀ lete. Yes, obsolete. And only a year and a half after its introduction. Why? Well, as one Amiga aficionado, Steve Dompier of Island Graphics, put it in the August '85 issue of *Personal Computing*, "Apple's in a cavern with the Mac; the [Motorola] 68000 [microprocessor chip]'s doing all the work."

The Macintosh uses the 68000 not only for number-crunching and other such tasks, but for just about everything else, including time-consuming graphics and disk-access duties (not to mention I/O in general), which could slow down Halley's Comet. However, the Amiga's three custom chips (Agnes, Daphne and Portia, in case you've missed all the hype about this cutely-named trio) take care of all that and much more, leaving the 68000 to lope along at 7.8 MHz. That, quite simply, is why John Pandaris, in the Premiere issue of *AmigaWorld* (p. 28), described the Amiga as "*blazing* fast, eerily fast, [and] preternaturally fast." This method—along with AmigaDOS, to be sure—also allows the Amiga to perform multitasking, which the Mac can't do *for real* (spare me any mention of the Switcher, which is useless to my "Skinny Mac" anyway) at any speed. Its moribund sister, the Macintosh XL, nee the Lisa, could, but only rather slowly, and with some fairly buggy software, if what I've read is accurate.

My trusty Mac was obsolete. Yes, obsolete. And only a year and a half after its introduction.

"So what?" you ask.

Well, so this: As a Mac user of over one-year's standing, I have a statement to make, and the proverbial three wishes for the way I would like to see the inevitable industry-wide support of the Amiga come about.

The Statement: Sorry, Apple. There is no other conclusion: You have been bested. By a Commodore-financed product. By a Commodore product that costs far less than yours does, and probably will cost even less than that a couple of years from now, if not sooner. And, since I know now that there *is* an alternative not only to you but to Big Blue, I'm going to buy it as soon as I can. It'll take some months of saving my coins (the coins I *would* have spent on upgrading my turtle-like Mac), but I will make the switch. It's as inevitable as the sunrise over West Chester, Pennsylvania, and the sunset over Cupertino, California.

Now, *the Wishes*.

1. *Adaptation of the better Mac products to the Amiga*. Yes, I know that some companies are already doing this. But, blast it, *some* isn't good enough. I want to be able to use Microsoft Word on the Amiga—in, of course, a much-improved version, worthy of the Amiga itself. (Version 1.0 for the Mac is only barely worthy of the Mac!) I want to be able to use a Copy II Mac-like utility on the Amiga. I want to be able to use a version of Airborne on the Amiga. I want. . . get the picture? And, of course, most businesses would want a 1-2-3/Symphony/Jazz-like product. The completed Enable package from The Software Group probably will be nice, but there needs to be more than one fish in the Amiga business ocean. I agree with John Pandaris that multitasking makes integrated programs unnecessary—just run a word processor in one window, a spreadsheet in a second window, a graphics program in the third, and so forth. But I'm sure he would concur with me that, if Amiga wants to have a serious shot at the IBM sucklings, it must offer things with which they are familiar. (More on the siren song of familiarity in a moment.) Once they are converted, *then* show them the better way!

2. *An ImageWriter printer driver for the Amiga*. I have found my ImageWriter to be a marvelous, easy-to-maintain machine that does just about anything I could ever ask. Must I part with it at the time the Amiga replaces my Mac? I can't believe that it would be difficult for an industry that could create the Amiga to make it able to use the ImageWriter. I rarely would want to print color graphics; text and black-and-white diagrams will do just fine for me.

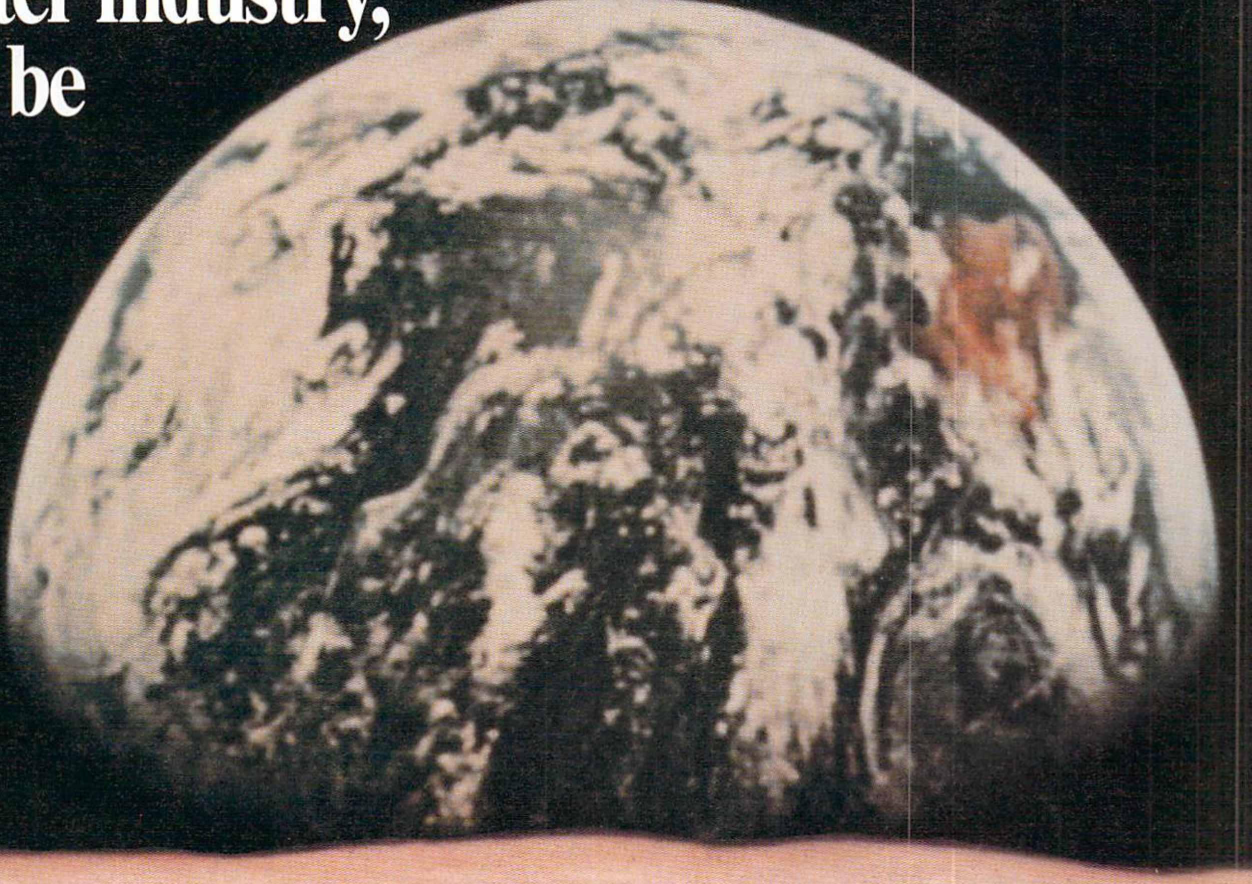
3. *Conversion of Mac files for at least limited use on the Amiga*. After all, the two computers use similar user interfaces (i.e., icons, the mouse, etc.), the same central microprocessor and 3.5″ disks (although the Mac uses just one-sided ones). Is it too much to ask that we repentant Mac users, upon switching, have some way to preserve the text, graphics and other files we have amassed other than simply printing them all out? With either MacWrite or Word, that could easily take days or even weeks in my case, and I'm only a *home* user! That would be a heck of a price to pay for having needed an easy-to-operate-yet-powerful computer before the Amiga was ready. After all, the Mac XL/Lisa ran (and runs) Mac software through use of an Apple software product called MacWorks. Is there not some way to make something like that for the much-more-powerful Amiga?

A cautionary note: There are rumors that the somewhat similar Atari ST will, through some similar type of software fix, be able to handle Mac files in at least a rudimentary fashion. If this is not simply more smoke being blown from Jack Tramiel's reborn Atari, it will provide his company with a serious competitive edge against the Amiga. Incidentally, let's be straight about this, friends: The Amiga *is* superior to the ST in a number of ways, although Tramiel & Sons obviously would disagree strongly. But a simple wedge in the market such as Mac-files compatibility could make a lot more difference than demonstrable superiority. If you don't believe that, please note that it remains much safer in this crazy industry to make a clone of the IBM PC than it does to make a truly better, but non-IBM-compatible, computer. American business prefers safety to innovation (another reason why the Japanese are beating the blazes out of us in so many fields, but don't get me started on that one!), and those businesses that already have been brave enough to go with the Mac and, rightly, thumb their noses at Big Blue's Pork Chop and its imitators won't want to take an even riskier route by going with a system that can't even *try* to read the files they've accumulated on the Mac. 'Nuff said.

Indeed, 'nuff said about it all. I will now print out my article on my ImageWriter, which, of course, will take plenty of time as the Mac switches info back and forth between RAM and disk. As the printing takes place, tying up my Mac for several long minutes (I'm using hi-res, after all), I will dream of the day, perhaps not too many months away, when, my Amiga at the ready, I can print a wordy article like this and get started on writing my next one. *At the same time*. Ah, bliss! ■

Address all author correspondence to Bryce Wray, 302 West Greenfield, Wake Village, TX 75501.

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Help Key

By Vinoy Laughner

Help Key is the place to find answers to those nagging questions about Amiga computing. Answers are provided through a genuine expert in these matters, Rob Peck, Director of Descriptive and Graphic Arts at Commodore-Amiga. If you have any questions about the Amiga that you can't find answers to and that just won't go away, send them to us, and we'll see what we can do. Direct your frustrations to: Help Key, c/o AmigaWorld *editorial, 80 Pine St., Peterborough, NH 03458.*

Congratulations to those of you who found our Help Key hidden mistakes. We surreptitiously placed them there to see just how sharp you are. Well, we have to hand it to you, you're good. We can't get away with anything around here! You earned them, so here they are—the right answers.

Premiere Issue:
Page 86, column one, question three: the answer should read simply "Motorola 68000"; there is no "7.8 MHz" version.
Page 86, column four, question two: in line 10 of answer, RTV should be RGB.
Page 88, column three, para. two: first sentence should read "15 colors plus transparent if sprites are attached, three colors plus transparent if used individually."
Page 88, column four, question two: answer should read "with the *power on* it is all right to plug or unplug the mouse and gameport accessories, but *NOT all right* to attach or detach any other peripherals."

Q: Is it possible to send the four sound channels separately or simultaneously into a conventional audio mixer?

M. Claude Giroux
Ahuntsic MTL
Quebec, Canada

A: The Amiga merges its four audio channels into two separate stereo outputs with two channels on each. You can control both the frequency and volume of each of the channels independently, and the custom chip merges them together for you. You can think of this as having a built-in mixer for the Amiga audio.

Q: Is the total eight-octave range, available with the C-64's SID chip (with all digitally imaginable tunings), likewise available on the Amiga?

Arthur S. Wolff
Wichita, KS

A: Yes. However, the Amiga uses digital-to-analog converters to produce its sound output. Instead of being limited to whatever a special-purpose sound-generator chip could produce, the Amiga can take either digitally-generated waveforms or sampled sounds and reproduce them faithfully. So sounds that other computers can't generate with their sound-generator hardware are easily produced by the Amiga as a simple playback function.

Q: Can I plug speakers directly into the Amiga, or do I need to run them through an external amplifier?

John Radcliffe
Searcy, AR

A: The audio output from the Amiga must be directed through an amplifier in order to drive speakers.

Q: Will the Amiga be able to support multi-user terminals through its 68000 bus expansion port?

Paul R. Rattray
Lemon Cove, CA

A: The Amiga is a multi-tasking, rather than a multi-user, system. This means that one user can do many things at once. The special purpose display chips produce one display, split into windows and screens, for whomever is viewing that screen. It is certainly possible that some manufacturer might consider adding external terminals to the system, and adding tasks that would communicate with those terminals, but the display that an external user would see would depend purely on the software being run and the display capabilities of the external terminal.

Q: How does one become a software developer for the Amiga? How can I obtain documentation for the Amiga system software?

David Levner
President, Sabaki Corp.
Rego Park, NY

A: Developers deal with Commodore's software support group in West Chester, Pennsylvania. Basically, Commodore wants to know what kind of products you wish to implement and what you have done in that same area previously, for other computers. We are interested in seeing a diverse range of applications for this machine. You can write to Paul Goheen at Commodore for an application form and more information.

System software documentation, including applications examples, will soon be available in bookstores and computer stores.

It is the same material that is bundled with the developers' packages. Titles are: ROM Kernal Manual, Hardware Manual, User Interface Manual and three AmigaDOS manuals, specifically a User's Manual, Developer's Manual and Technical Reference Manual.

Q: I noticed in your premiere issue the statement that the sprites and blitter can move low-res objects. Can high-res objects be animated likewise? Would you need to use assembly language to do this?

Robert Sommer
Colgate, WI

A: The system animation software support moves data, organized as objects. It doesn't distinguish whether this data is being drawn into a low-res or a high-res area. Once the data structures are defined for the animation system, whether by assembly code C, or Basic, the system can handle the animation on its own. You see, when you ask that animation occur, the controlling program (perhaps Basic) needn't be very fast, since it will wait for a time interval, tell the system to move the data, then wait again. Thus, animation can be controlled from a higher level language.

Q: How fast is the transfer rate of the disk drives? Will loading a program be a long affair as with the C-64? Are the external drives "intelligent?"

Richard A. De Lay
Bolling AFB
Washington, DC

A: Program loading is quite fast. For example, a word processing program that consists of over 120,000 bytes of code loads in less than 30 seconds. External drives are not intelligent. They are directly controlled by the Amiga and transfer their data via direct memory access (DMA). That is what makes the disk transfers so fast. The system can actually load data faster if the DOS is not used (Kickstart loads 256K in less than 20 seconds); however, most people need DOS to provide a filing system and its commands.

Q: Will the Basic bundled with the Amiga provide full access to all of the Amiga's features (i.e., hi/low bitmap resolutions, graphics, color, sound, animation and speech synthesis)?

Michael Clendenden
Grimesland, NC

A: Amiga's Basic is full-featured and shows off the capabilities of the machine.

Q: Will the Amiga initially not have ROM? I was told that the first Amigas will have 256K of RAM, plus 256K of protected RAM into which the operating system will be loaded. Will the operating system become a permanent part of ROM in the future? How will the upgrades be handled?

Rich Kevin O'Brien
Renton, WA

A: Your information is correct. When you turn on the Amiga currently, it requests a "Kickstart" disk which contains the operating system. It is loaded into a RAM space which then becomes the equivalent of ROM when Kickstart is done. Should it become necessary to upgrade the operating system prior to committing it to ROM, registered owners of "RAM/ROM" machines will receive a replacement Kickstart disk.

Q: Will the Amiga allow you to print text, followed by mouse-drawn artwork (or disk-stored artwork), followed by more text, on a single piece of paper?

David Poor
Sun City West, AZ

A: Text is simply another form of graphics. You can intermix text with graphics in any manner you wish.

Q: What is the tilde key for? Also, of what use are the two ALT keys and the two "A" keys next to the space bar?

David Simanoff
Cobham, Surrey
England

A: Tilde (~) is simply one of the legal ASCII characters found on computer terminals.

The ALT keys perform a similar function to the SHIFT and CTRL keys. They let some applications redefine keys to have ALTernate meanings.

The "A" keys are the "Amiga" keys. Under Intuition, they respond as substitutes for the mouse and its buttons. ALT and Left-Amiga together give you a left-button mouse event. ALT and Right-Amiga together give you a right-button mouse event. Either Amiga key with a cursor key moves the mouse cursor in the correct direction. If you hold down the cursor combination longer, the cursor moves faster. So, if you don't want to take your hands off the keyboard, it isn't necessary. But the mouse gives you more convenient control.

Q: Can the Amiga sense if there is a printer connected to its Centronics port or a modem to its serial port? How about a hard disk or a second floppy drive? Does AmigaDOS have an autoexec feature, like MS-DOS?

Joe Bostic

A: The Preferences menu tells the Amiga what kind of printer should be expected and what baud rate to use for a modem. AmigaDOS does provide an autoexec feature, known as a start-up-sequence. This is a script-file, which is executed out of a system file and can be modified by the user. Additionally, under the CLI (command line interface), you can perform other script-files, with parameter substitution, using the AmigaDOS Execute command.■

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Coming Next Issue

The next issue of *AmigaWorld* will take the logical steps from graphics to video and music. What are people doing with the Amiga's video and sound capabilities? From laser disks to CD-ROMs to MIDI interfacing. Interactive video for teaching, training and entertainment is an area where the technology is rising and the costs are coming down. With laser disks and CD-ROMs, the storage capabilities of your Amiga suddenly jump into the gigabyte range. What are companies doing with all this memory and "instant access"? What will you be doing with it?

Passive video like MTV won't be passive very long with some of the new programs coming out that let you design your own videos, music and all. We will step into the world of professional video production and professional music as well as the "do it yourself" music and animation packages available for the Amiga.

We will also have numerous other features on Amiga-related matters, like languages, spreadsheets and perhaps a game or two. A lot of new things should be popping up in the next few months, which promise to be exciting, different, innovative and amusing. So, if you liked this issue of *AmigaWorld*, then just wait, we haven't even started!



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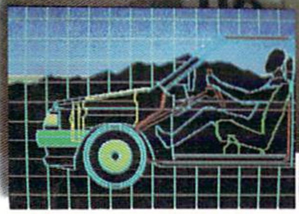
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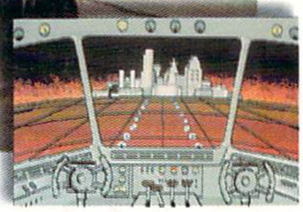
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